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THE USE AND ABUSE OF EXPERT MEDICAL AND SURGICAL TESTIMONY AND SOME RECOMMENDATIONS FOR INCREASING THE VALUE OF SUCH TESTIMONY.

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Expert testimony has no logical place in the common law theory of trial by jury. The admission of it, indeed, violates one of the cardinal principles on which the system is founded. The legitimate function of testimony in courts of law is to make known the facts relative to the cause in controversy. Inasmuch as these facts in general rest in the knowledge and recollection of persons, the ordinary medium for the ascertainment of them is the living witness. Owing to the infirmities of human nature, it results that the facts made known in a legal controversy through this medium are often, if not always, uncertain, confusing and contradictory. To deduce from this mass of uncertainty, confusion and contradiction a just conclusion as to the truth of the matter is the proper province of the jury. It is the theory of the law that in the process by which the jury deduce from the mass of facts laid before them the ultimate conclusion of fact which forms the basis of their verdict, both the judge and the witness are rigidly excluded. The judge is confined to the dry domain of the law; the witness to the bare region of fact. Into the bright realm of speculation upon the facts, where are conceived and brought forth those marvelous children of chance known as jury verdicts, neither may enter. The lot of the witness in this respect is even harder than that of the judge. The latter is not confined to telling the jury what he *knows* the law to be; he may, and frequently does, instruct them as to what he *thinks* it to be. But the pent-up witness is limited to the bare recital of what he knows. He may not enliven his wearisome tale by interspersing the facts with his theories; nor may he lighten the arduous labors of the jury by giving them the benefit of his opinion on the facts. Indeed, the rigid and constant effort of the theory of the law of evidence is to prevent any expression of opinion on the part of the witness.

To this general rule, the expert witness is the anomalous exception. Indeed, it is a misnomer even to call him a witness. He may have, and as a rule has, no knowledge of the facts out of which the controversy arose. He is called to tell not what he knows but what he thinks; not to relate facts but to rehearse opinions.

The reason for such a startling departure from the fundamental rule of evidence which excludes the opinion of a witness, rests on a recognized defect in our jury system. It is admitted, as the basis of this exception to the general rule, that there are certain classes of fact from which the ordinary juror is not so well qualified to draw a just and correct inference as are men who have made such facts, their phenomena and their laws, the subject of special investigation and study. And so, such facts being in evidence, the expert—the man experienced in the science or art to which these facts belong—is called, not to add to the mass of facts involved in the controversy, but to assist the jury in the performance of its legitimate function of deducing inferences from the facts. In other words, the expert witness is not properly a witness at all, but rather an assistant to the jury.

The expert was an early graft on the growth of the law of evidence; and it is an instructive and significant fact that it was in the capacity of an assistant to the court that he first won his anomalous place in our system of jurisprudence. His first appearance was as an adviser of the court or judge in matters of science or learning in which the court admitted its deficiency. In a case decided as early as 1555, it was said by Saunders, J.: "And first I grant, that if matters arise in our law which concern other science or faculties, we commonly apply for the aid of that science or faculty which it concerns. Which is an honorable and commendable thing in our law. For thereby it appears that we do not despise all other sciences but our own, but we approve of them and encourage them as things worthy of commendation. And, therefore, in 7 H. 6 in a case that came before the judges, which was determinable in our law, and also touched upon the civil law, they were well content to hear Huls, who was a bachelor of both laws, argue and discourse upon logic and upon the difference between *compulsione præcisa et causativa*, as men that were not above being instructed and made wiser by him. And in an appeal of mayhem the judges of our law have used to be informed by surgeons whether it be a mayhem or not, because their knowledge and skill can best discern it." (Buckley v. Rice Thomas, I Plowd. 122.)

How much the science of medicine and surgery owes to this complacent approval and encouragement of it, as a "thing worthy of commendation," by this ancient spokesman of the law, is not for a lawyer, speaking to physicians and surgeons, to say. We of both professions are more interested to note that, when the law first pressed the physician and surgeon into its service as an expert, it was in the capacity of instructor to the court.

The case from which my quotation is taken is both instructive as to the then position of the expert witness in the law, and prophetic of his fall from grace. It was a contested election case. Buckley, a Knight of Anglesea County, in Wales, sued Rice Thomas, sheriff of the county, to recover a penalty for return-

ing one Lewis as the duly elected member of Parliament, whereas Buckley claimed the election. Buckley's lawyer alleged in his declaration that although (*licet*) he was elected, nevertheless the defendant did not return him, but Lewis, as the chosen Knight. The sheriff's lawyer, with scholastic acuteness, demurred on the ground that this allegation did not amount to a positive affirmation that Buckley *was* elected. The discussion of this important issue was opened by Staunford, Puisne Justice, thus learnedly:

"Then it is to be seen how the plaintiff has here alleged that he was chosen a Knight to come to Parliament. And it seems to me that he has not alleged it by a full affirmation. And thereupon the meaning of this word (*licet*) ought to be weighed and discussed. And in order to understand it truly, being a Latin word, we ought to follow the steps of our predecessors, judges of the law, who, when they were in doubt about the meaning of any Latin words, enquired how those that were skilled in the study thereof took them, and pursued their construction. . . . So in 9 H. 7, it appears that one was bound in an obligation upon this condition, that if he paid £5 of fine gold, that then etc., and the obligation was *puri auri*, and there the judges were in doubt what was Latin for *fine* gold, and (as it appears by the book) the masters of grammar were put to give their opinion what was Latin for *fine*, and they could not tell. So that our predecessors have always consulted about the meaning of Latin words with grammarians and others that best understood them, and such sense as the grammar warrants and allows they have admitted; wherefore I apprehend that the grammar is the most proper judge of the meaning of this word, *licet* being a Latin word."

Whether recourse was had, in this case, to the grammars, rather than to the grammarians, as in the case cited from the time of Henry VII., because of the unsoundness of the latter experts on the gold question, does not appear; but it is certain that the result of calling the grammars as expert witnesses foreshadowed the modern decadence of expert testimony. The grammars called upon seem, like the modern experts, to have taken sides and swore point-blank against each other, so that when their testimony was duly considered, the judges were unable to agree. The plaintiff's grammar, however, prevailed over that relied upon by defendant; the majority of the court were convinced that *licet* could, and did, introduce a full and precise affirmation, and the plaintiff was successful in his suit. Posterity would doubtless reverse that judgment if the record were thus open to review, not on the ground that the court misconstrued the Latin word, but because civilized sentiment would deny that the plaintiff had suffered damage by the sheriff's false return. For the parliament to which the litigious knight was elected, but in which he was saved the odium of sitting, was the execrated body that revived the barbarous statutes of Henry IV. for the punishment of heretics; and while the sapient judges of the law were maundering at Westminster over the meaning of *licet*, the recalcitrant Protestants were burning at Smithfield. The man who was prevented from sharing in that infamy ought not to be heard to complain.

The disgraceful disagreement of the grammars in Buckley' case, I have said, foreshadowed the decline of the expert witness both in usefulness and in the public estimation. It was, however, an early, though a sure antetype, and for more than two centuries after that case was decided the expert maintained his honorable and trusted position as *amicus curiæ*. A case decided in 1782 is the first, so far as I know, to reveal him in his well-known modern character of the retained advocate of a party. In that case Lord Mansfield granted a new trial on the ground that the witness had been surprised on the trial by the testimony of an expert called by his adversary on a question of science involved in the cause. It was held that he was entitled to pit his expert against that of his opponent, his Lordship saying: "In matters of science, the reasonings of men of science can only be answered by men of science." (*Folkes v. Chadd*, 3 Doug., 157.)

This was the first step in the downward path of the expert. The right, thus established, on the part of the suitor to call his own expert to help prove his case was eagerly embraced and promptly abused. The expert was soon no longer consulted by the court or called to aid the jury, but was retained on one side or the other of a controversy, in the expectation, which was seldom disappointed, that his testimony, like that of other witnesses called on the same side, would help that side to prevail. The skill, the wisdom and the reputation of science were employed through the medium of the expert, not to work justice, but to win cases. The high place that was set apart, by a modification of the true genius and theory of our system of evidence for an expert adviser and assistant of the court and jury, was filled by the paid partisans of litigants. And thus the humility of the law, which was willing to be instructed and aided by its sister sciences, in its efforts for the attainment of equal and exact justice, has been cheated of its hope.

I do not mean to say that science and its devotees are alone responsible for this departure by the expert from the high path of usefulness and honor which the original conception of his functions opened up before him. I think it more than probable that he was seduced from that path by the allurements of the advocate of the law, though it must be admitted that the retainer which now always accompanies the employment of the expert witness, has been both the price of his honor and the cause, in part at least, of his downfall. When the practice of paying fancy retainers to scientific witnesses first came in vogue I do not know, but I doubt if the grammarians, the doctors of the civil law, the physicians and engineers called upon to advise the court and assist the jury in matters relating to their respective sciences, from the troublesome times of Philip and Mary to the golden age of the English common law when a Mansfield sat in judgment, took pay for their opinions from either side of the controversy in which they testified. The modern plan of paying such retainers still has its bitter opponents. (See article on "Expert Testimony," 138 *N. Am. Review*, 605.) The force of the proposition must be admitted that a witness should not be compelled to devote to the public good the special knowledge and skill which he has only been able to acquire by special study and investigation, without receiving special compensation therefor. This much might be conceded and there would still be room in the argument for the proposition that the witness who parts with his knowledge only for such a consideration, is hardly entitled to be called *amicus curiæ*.

The real evil, however, is not in the fact that the expert is paid a special retainer, but that the retainer is paid by the party who calls him to testify. The

influence of this fact reaches in two directions; it corrupts the witness and it weakens the weight of his testimony with the jury. I make no apology for the statement, in the presence of men who are constantly called as expert witnesses, that the practice of paying such witnesses retainers on one side or the other of a legal controversy, corrupts the witness. No charge of moral turpitude is intended by the assertion. It is no doubt natural that a witness thus retained, knowing the result which the party who retains him hopes for in the verdict of the jury, should begin his investigation into the facts of the case with a lively hope that they might justify inferences tending to produce that result; that he should seize eagerly upon the facts that have such a tendency, and look coldly and with critical eye upon those that point another way; and that he should finally reach a conclusion in harmony with the spirit that has controlled his investigation and in consonance with his client's desires. The influence of the retainer upon both process and result, in such a case, is more insidious than open. The most mentally honest may not even be sensible of its operation, nevertheless it is there, working out its result with more or less directness and certainty.

In no class of cases is this influence unfelt. I venture to say in this presence that the discriminating railway lawyer frequently has occasion to doubt the entire fairness of the report and prognosis of the surgeon of his road in cases involving what may be called concealed injuries. The interest of the surgeon in his employer's affairs, his natural desire to save that employer from heavy loss, a pardonable pride to justify his selection as its medical adviser, trace their origin directly to the retainer or salary that secures his services. These sympathies, together with the conviction that long experience in the similar cases of his client has forced upon him that many of such claims are wholly feigned or largely exaggerated, have all, consciously or not, entered into the process that has led him to the opinion given to the legal adviser of the company. He may be, and undoubtedly is, mentally and morally honest in his conclusions, but to the extent to which his view has been perverted and his judgment affected by these considerations, he has been corrupted by them. The situation would not be so bad if the corrupting influence of the retainer were always of the unconscious character which I have described. Unfortunately, it must be admitted that the retainer is often both given and accepted in the literal sense of the term, as a sum paid to retain the knowledge, skill and reputation of the so-called witness in the sole interest of the party who pays the fee. In such a case the influence of the retainer is direct, open and convincing. The effort of the expert thus retained, is not to lead the jury by correct and impartial deductions from the facts in evidence to a just conclusion as between the contending claims, but to develop, fortify, present and defend a theory, which, if accepted by the jury, will win his client's cause. I think I have not been unduly harsh in stigmatizing such a sale of professional standing, learning and skill as corruption; a better term would be prostitution.

A second effect of the practice of retaining experts as witnesses is to minimize and degrade the value of their testimony. A prime requisite to the credibility of testimony is that it should be disinterested and impartial. The witness to the ordinary facts of a legal controversy, though called by and friendly to one of the parties as against the other, must, if he would have his testimony weigh with the jury, relate his facts with absolute and apparent impartiality. The least inclination on his part to color his narrative for the benefit of the party producing him, discredits him as a witness and casts a cloud upon his testimony. What, then, must be the position of the expert, who it is known in advance has been *hired* to testify in favor of the party calling him, and whose sole effort on the stand is to demonstrate that the laborer is worthy of his hire? I could weary your patience with extracts from judicial opinions which describe in more or less forcible and picturesque terms, the degraded position of the expert before the courts and the slight esteem in which his testimony is held. Your own experience, no doubt, makes such a recital unnecessary. One writer, speaking of the fee system, has said:

"Hence it is that, apart from the partisan temper more or less common to experts, their utterances, now that they have as a class become the retained agents of the parties, have lost all judicial authority, and are entitled only to the weight which a sound and cautious criticism would award to the testimony itself."—Isaac T. Woodson in *III Kentucky Law Reporter*, 477.

The method provided by the machinery of the courts for testing the worth of the expert's testimony by "a sound and cautious criticism," deserves a passing notice. The reason for calling the expert as a witness must be borne in mind:

"It is not because a man has a reputation for sagacity, and judgment, and power of reasoning, that his opinion is admissible; if so, such men might be called in all cases to advise the jury, and it would change the mode of trial. But it is because a man's professional pursuits, his peculiar skill and knowledge in some department of science, not common to men in general, enable him to draw an inference, where men of common experience, after all the facts proved, would be left in doubt."—Shaw, C. J., in New England Co. v. Lovell, 7 Cush., 319.

The man thus qualified to draw an inference which the jury must deduce before they can reach a verdict but which, owing to their want of knowledge and skill in that branch of science, they are unable to draw, is called before them to tell them what the proper inference is. He gives his opinion and his reasons for it. An advocate, more or less learned in the law, and superficially prepared for the purpose with the assistance of the opposing expert, puts the witness through a cross-examination, the object of which is not to learn the truth, but to demonstrate that his opinion is wrong, his reasons unsound, and the witness himself either ignorant, dishonest or ridiculous. The expert on the other side is then called and gives a contrary opinion, with grave and weighty reasons in support of it. The opposing lawyer then tries by cross-examination to show that this witness is as ridiculous, dishonest, ignorant and unsound as his own expert. The whole matter is then referred to the jury, who were admittedly, at the outset, incapable of drawing a correct inference, but who, edified and instructed by the dignified performance that has taken place before them, are now expected to give to the conflicting theories of the experts "the weight which a sound and cautious criticism would award" to them. The wisdom of such a final reference must be apparent; the capacity of the ordinary jury for "sound and cautious criticism" in matters of science needs no eulogy here.

This evil, however, if it be an evil, can hardly be

remedied until we shall change materially our method of determining questions of fact. The really vital abuse of expert testimony, and the one which is susceptible of speedy correction, is the practice of retaining the expert as a partisan advocate. Indeed, I am inclined to think that the correction of this evil will tend largely to the lessening, if it does not accomplish the abrogation, of the other. I believe, in my optimistic ignorance, that when experts shall resume their true relation to the court and jury, as advisers and assistants, there will be fewer disagreements among them than under the present system, and that such as shall occur, being honest differences of opinion, uncreated and uninfluenced by interest or partisan zeal, will be more readily and more decently reconciled. None would more quickly recognize or more readily bow to this changed condition of affairs than the members of the bar. There is no occupation that is less fruitful of results to the client or of reputation to the lawyer, than the cross-examination of an honest, intelligent and impartial witness. It is only against the ignorant, the prejudiced or the corrupt, that cross-examination is a fatal, or even an effective, weapon. And when science occupies, in the presence of its experts, the position of an honest, wise and disinterested adviser of the court and jury, the efforts to discredit both its processes, its conclusions and its representatives, to which the legal profession is now driven perforce, will, by losing their efficacy, lose their place in our trials.

The remedy for the apparent abuses of expert testimony lies in the designation by the court in each case of the experts who shall be called to testify. There is no novelty in this suggestion; it has been frequently and ably urged and, I believe, already commends itself to the honest judgment of both our professions. It will be observed, however, that I have used the term "designation" rather than "selection" by the court. If we always and everywhere had a judiciary that was able, impartial and strictly just, from which prejudice, partisanship and demagoguery were absolutely removed, I should favor the sole selection of experts by the judges. But even my limited experience and observation make it safe to say, without injustice to the judiciary here or elsewhere, that there are tribunals in which both the parties and the blind goddess herself would prefer that the experts whose opinions are to guide the jury to a correct conclusion, should be selected by the litigants. The parties, therefore, should be given an opportunity to agree, the court to make the selection in case of disagreement. But whether agreed upon by the parties or selected by the judge, the experts should receive their appointment from the court. They should be officers of the court, sworn and acting as its commissioners for the better ascertainment of the truth.

This plan would remove the root of existing evils, the retainer system. The cause of the discredit in which expert testimony is now held being thus removed, the effect would disappear. The expert would be restored to his ancient and legitimate function of adviser to the court and jury, and, in this character, would win back his place in the confidence of the courts and the community. The use of science in the courts would be consecrated to the task of solving, instead of obscuring and confusing, those difficult questions which the law, without the aid of science, admits its incapacity properly to solve. More than this, the plan would insure the selection of actual *experts*. The medical profession, especially, knows how little this term means in our courts. As the law now stands, the preliminary examination into the qualifications of medical men who are presented as expert witnesses is mere mummery, meaning nothing. With but very slight reservation the statement may be made that any one who practices medicine, no matter of what school, or with what little pretension to preparation, scholarship or experience may be permitted to swear to his opinion of the cause, course and probable duration and effect of the most hidden injury or the most mysterious malady. The veteran practitioner and the novice; the disciple of approved schools and the herald of a new propaganda; the profound scholar and the sciolist, all are presented to the jury with the equal sanction of the law, under the comprehensive description of "experts." Under this common guise trickery poses as skill, and assurance as wisdom. Those are the most efficient experts who can most plausibly present and most boldly defend the theory required by the exigencies of the side on which they are retained. This faculty is not a necessary accompaniment of professional learning, skill and reputation, and is not seldom found, in most effective degree, among that class of whom it has been said that their "confidence, in many cases, bears a direct similtude and ratio to their ignorance." The appointment of expert witnesses by the court would exclude this class of men and would insure the calling of experts who are not only impartial and disinterested, but who are best qualified to express an opinion on the case before the court. The parties, knowing that neither could make use of a partisan witness, would both be interested in having the witness whom the court should call chosen from those most competent to form an opinion on the particular case. The learned would not be called upon to pit their opinion against that of the ignorant, nor the honest against the unscrupulous. Character, rather than acuteness, would count in the choice of experts; learning and skill would take precedence of glibness and pretension. Thus science would be represented in the courts by its nobler disciples, and, while justice would be better served, science would gain in reputation.

Of course practical difficulties present themselves, as they do in the path of every advance. What shall be done with the practitioner who has attended a case from its inception to the time it has become the basis of a suit, and on to the time of trial? He is clearly a competent witness to detail the facts as to his patient's condition. Shall he be confined to a recital of these facts? Or shall he be permitted, though not a court expert, to express his opinion on those questions as to which expert testimony is admissible? Assuming him to be the equal of the official experts in learning and skill, he would seem, from his long and intimate acquaintance with the case, better qualified than they to form an opinion on these questions. Yet he comes in the character of the partisan and has the taint of the retainer about him. Professional pride, as well as personal pride of opinion, sway him irresistibly to the defense of the diagnosis on which his treatment of the case has proceeded, especially if that view of the case should be questioned or assailed by the experts. But, while there is danger in the admission of his testimony as an expert, there seems to be injustice in the exclusion of it; and the better judgment, I am satisfied, would admit it, trusting that his prejudice or ignorance, if his testimony should reveal either, would

find their foil in the wisdom and disinterestedness of the experts of the court.

A minor difficulty might be met in disposing of the question of compensation for the experts. Such is my opinion of the value of professional services, being a professional man myself, that I concede the right of an expert to a reasonable, and even a liberal fee. Nor would I keep the word of promise to the ear and break it to the hope by leaving him, for the payment of his fee, to the hazard of the collection of a bill of costs. The payment of his fee should be required of the party demanding the appointment of experts, and as a condition precedent to the appointment.

A more serious difficulty would be encountered in determining in what manner the expert should give his testimony or make his report, and how it should be treated when received. A logical adherence to the theory that the expert is the assistant and adviser of court and jury in matters about which both are ignorant would require that he report his opinion, with his reasons, orally or in writing, and that the jury should accept the opinion as conclusive of the question on which it bears. Of course, where opinions of experts differ, the jury, as in the case of conflicting testimony as to facts, must reconcile them, when possible, and accept that which is most reasonable, where the conflict is irreconcilable. And in this process of reconciling, accepting and rejecting, I suppose that cross-examination must be admitted to play its part, though the moment the official expert submits to cross-examination he loses something of his dignity and independence as an agency and officer of the court. In France, where the plan is in operation of appointing experts as court officials, the court not only selects the experts where the parties can not agree, but determines what questions shall be put to them. American lawyers, I think, would object to that method of procedure here. In Scotland the experts make a written report, upon which they are subject to cross-examination. Such a system might not be wholly unacceptable in our courts. Certain it is, that doubts as to the proper mode of procedure should not long obstruct such a needed reform.

(To be continued.)

PERIODICITY, A PHYSIOLOGIC LAW IN THE MALE SEX AS WELL AS IN THE FEMALE.

BY H. L. GREEN, M.D.

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"The proper study of mankind is man."—Pope.

The importance of a physiologic law of periodicity in the male, granting for the sake of argument such to be the fact, must needs be in its effect upon the human understanding so vast as to be scarcely of comprehension. And in its politico-economic influence of no less importance to the statesman than it is to the physician. Let us look at the scope of its application in figures in order to gain an approximate idea of the vastness of its application and influence. Just when puberty and the first orgasm, accompanied by the elimination of the male fecundating fluid, begins is not fixed at any definite year. Approximately, however, we know this with even more certainty than we do when it ceases.

"That women are menstruant and men pubescent at the year of twice seven is accounted a practical truth," Browne, "Vulgar Errors," Book, iv, chapter xii. We know its beginning is nearer 15 than 21. It will be of interest to note, as we are endeavoring to obtain some idea of its proportions, how often it will recur in the course of the individual lifetime, in that of all virile average men, in each generation and also its volume, its comparative and its intrinsic value, etc. Supposing that under the assumed physiologic law of periodicity we place it in round numbers at once a month or every thirty days, as we often do with women and for convenience in figuring, although we know it to be considerably oftener than this. Such laws are rather empiric at best. But what are we to consider a natural lifetime. Can we assert with certainty a physiologic law for the duration of life? Here we are again at sea. If there is such a law, where are we to find it? We may take tradition for it, but here we find nothing definite. Taking history we find it in the first place to be fixed at 120 years—Genesis, i, 3, or again at 70, Psalm, xc, 10. Preferring a scientific view of the matter, while wishing to be just to all sources of evidence we will examine the theories of M. Flourens, the distinguished French physiologist and "perpetual secretary of the Paris Academy of Science," deceased 1867, sets the normal period of life at 100 years. The grounds upon which this conclusion rests are based on the fact in natural history that the length of each animal's life is in exact proportion to the period it is in growing. M. Flourens, from his own observations and those of his predecessors, concluded the life in the different species of animals to be *five* times as long as the period of growth. The period at which animals leave off growing, or, to speak more correctly, the precise circumstances which indicates that growth has ceased, M. Flourens ascertained to be, "in the union of the bones to their epiphyses. As long as the bones are not united to their epiphyses the animal grows; as soon as the bones are united to their epiphyses the animal ceases to grow." Now, in man the union of the bones and their epiphyses take place at the age of 20. Consequently M. Flourens preclaims that "the natural duration of human life is five times twenty years, or one century." Applied to domestic animals, M. Flourens' theory has, he tells us, been proved correct. "The union of the bones with the epiphyses," he says, "takes place in the camel at 8 years of age, and he lives 40 years; in the horse at 5 years and he lives 25 years; in the ox at 4 years and he lives 15 to 20; in the dog at 2 years and he lives from 10 to 12 years; in the lion at 4 years and he lives 20." That man does not in these latter days live out his allotted time M. Flourens triumphantly explains in these words: "With our manners, our passions, our torments, man kills himself." Viewed in these modern days sixty-five years would seem a fair guess at the duration of life. In the medical profession the duration of life has been approximately given at sixty years (JOURNAL, Jan. 2, 1897). Let us strike an average on these different estimates—120, 70, 100, 65 and 60 years—we find 83 years to be the period for a lifetime where the uninterrupted course of nature runs her consistent course. Lopping off fifteen years as an equivalent of the period preceding puberty for the time in old age when vitality may be considered to cease, we have left 68 years. This physiologic period is subject to further reduction by war, pestilence, disease, accident and unphysiologic living to about one-half, giving us 34 years as the basis on which to figure virile activity to the individual; and at once a month he will have

in a lifetime 12 times 34, or 408, recurrences of the physiologic sexual cycle.

On the basis of the statistics which show the *pater familias* in the proportion as one to five, or, on that of the voter, which is the same ratio, and taking the earth at 1,500,000,000 inhabitants, we have 300,000,000 cycles recurrent 408 times in a life period (34 years) or 122,400,000,000 to the generation. If a person were able to count at the rate of 200 in a minute and were to work without intermission 12 hours in a day he would take 850,000 days, or 2,328 years and 280 days to count them. Again, taking the volume of these at each individual cycle (*vide infra*) at half an ounce we have 478,125,000 gallons; which to count as before would require 9 years and 25 days. What is the value of this vast amount of fluid in which such latent possibilities lie dormant?

Now what of the intrinsic value? Only one-fifth, that which vitalizes the ovum (*vide supra*) may be considered as having any intrinsic value at all. The balance having no value serves as a wash-house calculation. The intrinsic value of the good fifth, however, transcends all calculation, for it is that of the totality of human life itself above all things else.

"All life is divine and God's way of doing things is the way of continuous progressive change according *to certain laws*."—Lyman Abbott.

Periodicity in the female claims the dignity of physiologic law. May this claim really, after all, be made with greater justice than for the male? We think not. In the female menstruation regularly recurring and associated with the maturation of a Graafian vesicle and production of an ovum are taken as the evidences.

"With the immediate causes of menstruation we are unacquainted, we express only our ignorance when we assert it to depend upon periodicity; it is evidently connected with the condition of the ovaries and—it is generally supposed—with the periodical discharge of ova from them. The menstrual secretion is the separation of the catamenial discharge from the uterine glands and vessels." (Dunglison.)

Striking at the beginning, the cause of the ovarian activity, as we shall have to make a comparison of it to the testicle, let us note the facts. A definite inherent law of balance and mutual dependence of action in the minute cell elements of the ovaries, the Graafian vesicles, the blood vessels, the blood, the lymphatics and the nerves, exists. This balance is primarily identical with the vital essence or spark and so delicately and accurately fixed that the ovary completes its work at regular intervals, giving rise to its natural product, the ovum. The Graafian vesicle gradually rises in the ovary to its surface, where it ruptures, liberating its perhaps precious contents, the ovum, which is seized by the fimbriated extremity of the Fallopian tube or *morsus diaboli* and conveyed through this tube into the uterus, where it may grow, or wither, as many a flower, and come away with the general flow of the catamenial discharge in from one to seven days. Now we contend that there exists in the testicles this same balance among the minute cell elements of reciprocative action and dependence as we have shown necessarily to be the case in the ovaries or *testes muliebres*.

"If the testis is the male ovary, it will comport itself in all essential respects as an ovary. Semination is a distinct function corresponding to that of ovulation. By minute morphologic studies the conviction of the identity of testes and ovaries has been confirmed. Identity of structure carries with it identity of function." (Lewes). Under comparatively similar circumstances it will take a certain length of time for the testicles to produce a given amount of semination, *the work equivalent of the ovaries as represented by the ovum*. "One striking result of modern histology is that germ-cell and sperm-cell, ovum and spermatozoön, are identical, only modifications of one and the same anatomic element and in the earlier phases of their development they are indistinguishable." (Lewes.) The other organs of the body, under the same conditions of activity, produce each a *fixed result*, the brain of speech or thought, the liver of bile, and why should not also the testes? Moreover, taking the *temporary* destination of the testicular seminal product to be the vesiculæ seminales, these being *in this respect* the analogue of the uterus, there must needs be for it a corresponding capacity, we find this in the system of double reservoirs represented by the vesiculæ on the one hand and the epididymis with its annex tubuli on the other. Allowing for the small amount of secretion by the vesicles the main bulk of it remains to be attributed to the testicles working, as already shown, under periodic limitation. It follows therefore that the amount of product by the testicles in the given period of one month, which we have assumed, will require the capacity of these two reservoirs. Hence, if these were entirely drained they would refill in exactly the same period, that is, under absolutely physiologic or normal conditions. That this is so our observations and experience fully convince us, and if it could be carefully noted and recorded, we have no hesitation in asserting our belief that ample statistics would back us up in the truth of it. Statistics are, however, fallacious, and especially hard in these matters to get. Unless it be in the payment of the doctor for his care of genito-urinary diseases, there is no field in practice so given over to the lie as mankind's sexual orgies. But why *two* reservoirs? The first, vesiculæ, supply the earlier and the second the later orgasms of a period one to seven, say five days, of what may be called in the mammalia, the phenomena of heat or rut. This takes place physiologically when the two reservoirs are full. The first one either overflowing or being drained by coitus, or perhaps by masturbation. Coincident with the orgasm the semen flows from the vesiculæ, filling the empty space in front of them, priapism usually being already well advanced. As the orgasm approaches its climax the powerful prostate gland joins in the chase and in harmonious sympathy with "pushing a good thing along," adds its quota of fluid and contracts violently. This latter has the effect of dividing the seminal current. The strong involuntary muscular fibers of the prostate are intimately associated with those of the ductus communis seminalis passing through it and these conjointly acting as a sphincter stop the further flow from the vesiculæ and turn it backward, for future reference; while the forward current, reënforced from the glands of Cowper and of Littré is forced onward in its career of destination or destiny as the case may be, to the germinal spot, the shrine of Hygeia; or to the fate of Cæsar's ambition:

> "Swift fly the joys to anxious mortals known,
> Swiftest the sweetest, ere yet tasted, gone."

The first (vesiculæ) reservoir is now presumably nearly empty, but may yet, however, be still the

source of supply of one or more orgasms. The period, so to speak, of heat or rut continuing the second reservoir is drawn on to complete the physiologic periodic cycle and drained to the ultimate tubuli seminiferi within the testicles during the remaining days of the rut. The five days' work, product of the testicles during the rutting period is also drained, reducing the time of the periods to nearer the true twenty-eight day mark as we find it in point of fact to be, as with women in their menstruation. After the emptying of the first reservoir there is no difficulty in seeing how the draining of the second reservoir will occupy the remaining days of the cycle, constituted as it is of over 9,670 feet of fine, mostly capillary tubing, in which fluid is of comparatively slow movement. It is made up of the vas deferens, 4 feet; epididymis and globus minor, 40 feet; coni vasculosi, 26 feet, and the tubuli seminiferi, 9,600 feet (3,780 feet, Lauth). A physiologic period of quiet should now ensue and continue until the reservoirs are again filled, when another series of eliminations should take place as before, accompanied by a correlation or concourse of action between the different parts of the body, both premonitory and concurrent, as observed in the female at menstruation. This law of periodicity in its sociologic issue admits of almost infinite application. It furnishes a criterion where now there is no criterion. There is no page or paragraph in the whole range of medical books which we can cite in the elucidation of any criterion bearing upon this subject, and yet we find man seeking to know what is reasonable and natural in this regard. As many men as might discuss this subject would have as many different opinions concerning it. None would agree for there is no common ground to rest opinion on, all is chaos. False premises, self interest, erroneous notions, misguided experience, solitairism and chance are among the chief factors which determine the drift of this matter. *Sub rosa* indulgences, criminal opportunity and ignorance come in for their share. Indeed, man, as we find him, knows no law save that of the Billy Goat. The law of "know thyself" does not primarily occur to him, and so that gynocracy of advantage enjoyed by women through her knowledge of herself is denied to man. Like the radicle of the mistletoe he avoids the light, becomes a victim of his ignorance and perhaps to crime. He becomes miserable, has fears for the present and the future. He may become superstitious and seek solace in religion only to be disappointed with some such platitude as this:

"He truly Lent observes who makes the inward man
To fast, as well as make the outward feed on bran."—Howell.

He may then seek some one "who quacks of universal cures." (Hudibras.) Should he seek a physician, what is the latter's criterion for advice? As well might he say a tight rope between two chimneys when wetted will not pull over one of them as to say the seminal emission must not be of frequent recurrence, as is usually done and the patient dismissed with a little vague general talk about it and a placeboic prescription. Disappointed again and without a guide he is thrown onto the world's buffoonery to learn. He may marry and the domestic relations suffer. We recall the case of a young man whose wife, seven months *enciente*, gave birth, or aborted. The babe which came, *nolens volens*, was small and with umbilical hernia, capable of enduring only about three months. The "husband" said he had held sexual intercourse with his wife every night from the hymenial to the night of the birth, inclusive. "No organs of the body are so prolific and none so quiescent, *mutatis mutandis*, as the testicles." (Ultzmann.) This latitude, according to Ultzmann and which we know to be true, illustrates *à fortiori* the importance of physiologic periodicity if there be any such a law or anything approaching to it in this our vast sea of trouble. Parents and progeny as well as the commonwealth are mutually interested in such natural physiologic laws as have the least bearing on their welfare. That departure on the part of the parent from the physiologic principles of his being can not fail to have a corresponding effect upon the progeny, and as those suffer so suffers the commonwealth. According as such laws are departed from for any length of time there will be a corresponding defect in the product of the physiologic part, and in the case we are considering, the semen, spermatozoa chiefly. The quality of this may be thus varied considerably. The fertilization by the sperm-cell of the germ-cell in every relation of physiologic law is thus seen to be of fundamental importance. "The phenomena which occur even in the simplest of so-called 'direct' cell-division, are of themselves enough to prove that the process is vital or physiologic." (G. J. Romane's "Darwin and After Darwin," Vol. i, p. 106.) "The form of the embryo varies with the *quality* and the quantity of the sperm." (Haller, Bonnet.) The spermatozoa are potentially of the same nature as the whole body, and hence contain the possibilities of all its organs. Both parents furnish their quota to every part of the offspring. Soon after Leenwenhoeck discovered the spermatozoa the wildest and most preposterous ideas arose regarding them until the facts became known. For instance: "Following Audry, each one was supposed to set out to find the ovary, and to glide into an egg, close the door behind it with its tail and develop itself; if several wished to enter at one time into the same egg, they became angered, fighting together, breaking and luxating their members, which gave rise to monstrosities." (Burdach, "Traité de Physiologie," Vol. ii, 287, Paris, 1838.)

We are familiar with the laws of heredity. We know that there are transmitted from the parents in whatever relation to physiologic law, both their good and their bad qualities; their taints, such as the alcoholic for instance, and their diseases; whence come these unless by the elementary anatomic product of the original prototype? The spermatozoa are the primary motor, and in their mysterious power have the quality of communicating movement long after their original impulse has ceased, "as the twig is bent the tree is inclined." They are the cause primarily of development, and in them are the conditions which determine the subsequent development. "It is not contact alone, but the entrance of the spermatozoön into the ovum which determines fecundation. An exceedingly minute quantity of spermatozoa suffices, but the development takes place much more slowly than when the quantity is abundant, and below a certain minimum the impregnation is only partial, the yolk is imperfectly segmented and in extreme cases the formative principle is so far checked that the child ceases to resemble human beings." (Lewes, Aristotle.) When fertilized as we have seen by the spermatozoa the ovum gives rise to the whole body. By a series of successive differentiations of cells, or power or tendency impressed on cells whereby they grow into different forms, epigenesis, the embryo

arises from a simple homogeneous mass into a complex heterogeneous organism. This unknown power or tendency impressed on cells varies, as we have seen, with the quality and quantity of the primary motor, the spermatozoa, and continues to operate long after its original impulse has ceased; exerting its influence in the formation of all the tissues, histogenesis, in the new being, and even long after the latter's independent life. Continuing in the life of the individual this unknown power or tendency impressed on the cells and later on the tissues, and which science may reasonably seek to know, may have been so checked or diverted as to bring about an imperfect segmentation in the ovum, with what diversity of result no one may presume to say. It would range from slight effect upon the size of the individual, a malformation, a monstronsity, or even idiocy, or any other macroscopic evidences to those involving the microscopic tissues of the circulation, brain, liver, ganglia or any section of the body. The interferences in function corresponding to these defects would likewise be unlimited. To such matters then as these do we find the question of a law of periodicity in the male, in the issues, having logical effect. Surely these are matters of personal and public interest. Modern science has given to microscopic research all germs but the chief of germs, spermatazoa.

How do we know how these would comport themselves in variegated coats of methylene blue and fuchsin red, or Bismarck brown and gentian violet? Much has been learned of other microörganisms by these methods, and why should we not so learn more of these? It is to this radical point of investigation that we must direct our attention for the understanding and alleviation of many of our human ills. How do we know but many defects in spermatozoa may yet be demonstrated under the microscope? Almost insurmountable obstacles seem to stand in the way of this method of research; but less than twenty years ago bacteriology, which now has thousands of volumes written on myriads of all sorts of wonderful cocci, bacilli and spirilla, was scarcely the subject of an hour's study by the average medical man. Until bacteriology was established in its highest sphere of practical utility to man by Robert Koch, that splendid confrère and pioneer in this field of research, its resources were unknown and its obstacles insurmountable. But recent research through exact methods by trained investigators has changed all this, and now bacteriology is one of the first and most essential "stones" laid in the construction of a medical education. Closely allied to this method of study of the spermatozoa is the study in the fertilized ovum of the nucleus formed by the union of the male and female pronuclei, as already pursued. It is but a step from the latter to the former.

"These researches, chiefly due to Fleming, have shown that the nucleus, in very many tissues of higher plants and animals, consists of a capsule containing a plasma of 'achromatin,' *not deeply stained by reagents*, ramifying in which is a reticulum of 'chromatin' consisting of fibers which readily *take a deep stain*." (Romanes.)

In conclusion, let us add that whatever research may show to be modifications in the qualifying properties of the spermatozoa by reason of departures from physiologic law, it is hardly to be expected these would be altogether heeded, nor would we be able to prescribe one fixed remedy, such for instance as excision of the vas aberrans. We have heard of a nervous, timid person having pinned to his shirt these words: "My appendix has been cut out," and we would not wish to drive another to the words: "My aberrant oats have been sown." Just here it would seem the finger of medical science may point the way, and the profession constitute itself of right a veritable *corps de garde*.

No man can do the work of humanity; no one man can anticipate the labor of ages. It was by a succession of labors that the works of Harvey, of Jenner, of Pasteur and many others, reached their climax. Gravitation and evolution had to run the gauntlet of "ist" and "ism," but now are undeniable laws. The medical man has now, so to speak, to devote himself to the astronomy of microscopic bodies. When we consider the remarkable phenomena set up by the spermatozoön on entering the ovum, and the ultimate result of its deficiencies to individual and world at large, we can not inquire too closely into the physiologic laws, however remote, which affect them.

Should the physiologic law we are considering land us in an improved condition of sociology somewhere between the perfect ideal organism of Plato, and the best possible under existing conditions, of Aristotle, it would be as much as might now be hoped for along the lines of our argument on its periodicity.

DILATATION OF THE STOMACH.

A Clinical Lecture delivered in Rush Medical College.

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I place before you, this morning, a patient whose sallow complexion and expression of distress declare him to be a sufferer from chronic disease. He is about 50 years of age, though his whitened locks and bald crown seem to indicate a greater number of years. He is quite thin; his muscles are flaccid, and readily discernible through the dry and inelastic skin. In the left side of the scrotum hangs a considerable varicocele; the veins of the lower extremities are enlarged and tortuous; he is constipated and has long been a sufferer with internal piles. During the winter he complains of a hacking cough, but his thorax is everywhere extremely resonant; he has a chronic bronchitis with some degree of vesicular emphysema. The heart is not enlarged; there are no valvular murmurs, but the second sound is decidedly accentuated over the right ventricle. The liver is of normal size, though somewhat displaced upward. The spleen is also normal. But the abdomen is decidedly prominent and resonant.

The patient tells us that he has been for many years employed as a mechanic, both in Germany, where he was born, and in this country. His occupation compelled him to stand at a work-bench for many hours each day, with only such intermissions as were required for two or three luncheons, consisting chiefly of bread and beer. About twenty years ago he began to feel an uncomfortable sense of distension in the stomach after eating, and there was frequent eructation of gas for several hours after meals. The bowels were not then constipated as they have been during the last four years, in which he has ceased to drink beer, and has resorted to whisky instead of the four or five quarts of malt liquor that previously formed his regular daily allowance. Gradually, his appetite failed,

his tongue became coated, his breath exhaled an offensive odor, and his weight fell off from 210 pounds, till he now tips the scale at 130 pounds. You can observe for yourselves the anxious expression of his countenance; he is thirsty, though frequently drinking water in considerable quantity. His urine is scanty, slightly alkaline in reaction, deficient in chlorids, and its sediment contains crystals of the triple phosphates. He has been told that he was suffering from Bright's disease, but the urine today contains no albumin, nor any renal casts or epithelia.

The history of the patient should attract our attention to the condition of the abdominal viscera. From what has been already said we may proceed to exclude the liver, spleen and kidneys from further consideration. The greater part of the abdomen is resonant with retained gases, and no tumor can be anywhere discovered. Introduction of a long rectal tube permits the escape of considerable gas from the colon, but the upper half of the belly remains unchanged by this operation. Still, there is no excessive abdominal distension. Let us proceed to an investigation of the stomach. In the first place we will inspect the belly while the patient stands erect. This gives no positive result. Percussion over the abdomen elicits a tympanitic resonance over the epigastric and left hypochondriac region. At the level of the navel, and for two inches downward and to the right of the median line, is a somewhat cup-shaped region of dulness, with intestinal resonance below it and in both flanks. Now, causing the patient to lie down, the area of dulness disappears, and every part of the anterior wall of the abdomen returns a resonant sound. Palpation discovers nothing. Auscultation reveals a variety of bubbling and gurgling sounds in the gastric region, and on shaking the patient with considerable force, a distinctly audible splash, as of water shaken in a bottle, can be heard at quite a distance. These facts point toward dilatation of the stomach. Introducing a sound through the esophagus, we find it arrested at a depth of twenty-five inches, whereas in a normal subject it is only sixteen or eighteen inches from the lips to the lower wall of the gastric fundus. But, inasmuch as there may be an element of doubt due to the possibility that the sound may have moved upon itself, slipping along the wall of the stomach till it was arrested at the pylorus, let us employ another method of measurement. We will blow air with a pair of bellows through the tube until the stomach is fully inflated. By this method the organ is readily inflated, and as the man lies upon his back, you can see the outlines of the gas bag into which it has been converted bulging distinctly under the abdominal wall. This is one of the best methods of ascertaining the fact and the extent of stomach dilatation. When the normal stomach is inflated, its lower border reaches only about halfway down from the tip of the xiphoid cartilage toward the umbilicus. If it be found on or below the level of the navel, dilatation exists, unless you are dealing with a case of normally large stomach, such as occasionally is found in health.

The method which you have just seen illustrated has, however, one rather serious objection to its general use. You observed the retching and involuntary resistance that was excited by the introduction of the gastric tube. This can be often prevented by the administration of half a dram of potassium bromid an hour before the operation. The patient can be taught to accustom his fauces to the presence of the tube by carrying it himself through the sensitive pharynx, and then making the movements of swallowing. In this way, with a little practice, many patients learn to introduce the syphon tube without difficulty. But you will generally find it impossible, in dealing with a delicate woman or a neurotic man, to pass any kind of sound or catheter through the fauces into the stomach. You must then have recourse to the method of inflation by the liberation of gas in the stomach. This can be easily accomplished by giving two teaspoonfuls of sodium bicarbonate dissolved in half a glass of water, followed immediately by the same quantity of tartaric acid similarly dissolved. The union of these two solutions liberates carbonic acid gas enough to distend the stomach, which can be then examined by inspection, palpation, and percussion through the walls of the abdomen. This method enables us to dispense with the use of the stomach tube, and it is practically devoid of danger. Only in cases of gastric ulcer or advanced cancer, when it would be imprudent to sound the stomach, would I advise you to abstain from this mode of investigation.

Returning to the patient before you, we will withdraw the tube after syphoning out such liquids as are stagnant in the gastric cavity. The patient has eaten nothing since last evening, yet in the foul, sour-smelling fluid thus brought to view, you can see various remnants of former feasts. There are visible fibers of meat and shreds of vegetable matter—probably apple parings and potato skins. I once discovered in such ejecta a recognizable fragment of the kernel of a cocoa nut which could not have been swallowed less than a month previously. The reaction of this fluid is strongly acid. Testing it, after filtration, with litmus paper, we find the blue paper instantly reddened. This indicates the presence of something clearly acid—either a free acid or an acid salt. A piece of red Congo paper is turned blue on immersion, so we know that free acids are present. Adding to a few drops of the phloro-glucin-vannilin reagent in a porcelain dish a drop of the filtrate from the stomach, and heating it over the flame of a Bunsen burner, we at once get the bright carmin color that indicates the presence of free hydrochloric acid. That it is present in less than the normal proportion can be shown by diluting the filtrate with water. Under ordinary conditions, eight or ten parts of water to one of the filtrate would be needed to extinguish the reaction, but with this specimen the color fails to appear when only three or four parts of water have been added to one of the filtered juice. The smell of the liquid renders it probable that lactic and butyric acids are also present. In fact, in the laboratory the other day, from this patient was obtained an appreciable quantity of those acids, together with a trace of acetic acid.

Turning now from this patient, let us consider more fully the subject of gastric dilatation. It is evident that over-distension of the stomach may at any time follow excessive eating. This is not uncommon among children and childish adults, but it is a transitory condition which soon relieves itself by evacuation of the stomach upward or downward. It may be considered an acute dilatation of the organ. But there are causes that produce long continued, yes, even permanent dilatation of the stomach, either because of deficient energy in the gastric muscles, or by reason of pyloric obstruction to the onward passage of food into the duodenum. Most frequent among the causes of such obstruction are the scars of gastric or duodenal ulcers

that have encroached upon the pyloric orifice in the course of their contraction. Polypi that grow in the vicinity of the pylorus, sometimes reach a size that permits them to fall into the pyloric passage, and to obstruct it after the manner of a valve. This, and somewhat analogous obstructions caused by chronic gastritis, may occasion true hypertrophy of the muscular coat of the stomach, comparable to cardiac muscular hypertrophy. But, after a time, such overgrowth will be followed by degenerative atrophy, and then dilatation is developed. A similar effect is sometimes induced by pressure from without, when tumors in the adjacent organs are large enough to compress the pylorus or the upper end of the duodenum. It has been asserted that the right kidney can be so displaced as to produce pressure upon the outlet of the stomach and thus occasion dilatation of its cavity; but it is more probable that in such cases both conditions—floating kidney and gastric enlargement—are due to the same general laxity of the tissues. It is conceivable that under such conditions the pylorus might be displaced and twisted to such an extent as to interfere with its proper mode of opening for the passage of food, and thus the stomach might become dilated without actual constriction of its orifice.

Dilatation of the stomach may be occasioned by diseases affecting the muscular coat of the viscus. This often occurs as a consequence of chronic catarrhal gastritis, or by extensive ulceration or cancerous growths in the gastric wall. If the branches of the pneumogastric nerves are involved, there may be a loss of normal muscular tone, and dilatation will follow. A relaxed condition of the abdominal walls, permitting the stomach to gravitate downward, localized peritoneal adhesions, internal herniæ and violent concussions, are all mentioned among the possible causes of progressive dilatation. The general loss of tone throughout the muscular apparatus that follows the course of infective diseases, chlorosis, anemia, consumption, neurasthenia, hysteria, hypochondria and nearly all chronic diseases, is often the occasion of gastric dilatation. Especially true is this in diseases of nutrition like diabetes, where the patient habitually consumes an inordinate quantity of food and drink. Great eaters, who take little exercise, and vegetable feeders who consume roots and herbs like the cattle in a meadow, are liable to be similarly affected. Children who have the free run of an orchard, particularly those who have been rachitic in early infancy, and who are frequent victims of gastric catarrh, are often sufferers with dilatation, which may be recognized by the abnormal size of the abdomen. Since the male sex is most subject to gastric disorders, it is among men, from the age of puberty till the forty-fifth year, that the disease is most common.

The extent to which dilatation may reach is exceedingly variable. Sometimes the enlarged stomach seems to fill the whole abdominal cavity, crowding the liver and spleen upward, and pushing the intestines backward and into the flanks. Sometimes the lesser curvature of the stomach is dragged down below the border of the liver, and the pylorus may be found in the region of the cecum. In recent cases, the cardiac end of the organ is usually the first to yield; occasionally, the stomach presents a pouched appearance as a consequence of local traction through peritoneal adhesions, dragging outward a portion of the gastric wall, just as diverticula from the esophagus are sometimes formed. When there is great pyloric obstruction the esophagus shares in the consequent dilatation of the stomach.

The gastric mucosa exhibits the appearances of catarrhal inflammation. When there is pyloric stenosis the muscular coat of the stomach is sometimes considerably thickened; but when dilatation is dependent upon general causes of a debilitating character, the muscular layers are atrophied.

The symptoms of gastric dilatation depend upon physical changes in the stomach itself, and upon chemic changes in its contents. Mere enlargement of the organ does not necessarily indicate dilatation, for we occasionally meet with congenitally large stomachs that are perfectly healthy. In like manner, fermentation, or even putrefaction, of the substances that have been swallowed as food and drink, may occur as an accident without permanent dilatation. Again, these symptoms may be so insignificant that they are ascribed to catarrh alone, and the fact of incipient enlargement of the stomach may be for a long time overlooked. But when physical and chemic changes persist for any length of time, there can be no doubt of the existence of the disease. As it progresses, the patient slowly emaciates, becomes pale and cachectic, with a countenance expressive of suffering and exhaustion, and finally presents all the appearances of slow starvation. Appetite usually fails; but when there is obstruction of the pylorus, and consequent vomiting, hunger and thirst are experienced in a high degree. In many cases there is hiccough, pyrosis, and belching of gases that are sometimes odorless, but which are sometimes highly charged with hydrogen sulphid. Occasionally, the gas that is thus eructated is actually inflammable from the presence of marsh-gas among the products of fermentation. It is probable that the old stories of the spontaneous combustion of the human body had their origin in such occurrence of conflagration from too near approach of a lighted candle at the moment of eructation, setting fire to the beard and neck-cloth, and so producing suffocation, with more or less charring of the flesh as the clothing was consumed.

Prominent among the symptoms is vomiting. This is particularly common when the pylorus is obstructed. As the stomach enlarges it is thus evacuated less frequently, but the quantity thrown off is proportionately increased. The act of vomiting also often degenerates into a mere form of retching, so that the contents of the stomach are returned with very little effort. Many patients thus bring to light considerable masses of undigested food, hawked up every morning as they clear their throats on rising from bed. The vomited matter is usually very acid, sometimes setting the teeth on edge, and taking the color out of cloth with which it has been brought in contact. Sometimes, on the other hand, it may be rancid or sweetish, or, if there be cancer of the stomach, of an offensive character. The consistence and color of the vomitus depends largely upon the quality of the food—it is usually thin and watery, containing macerated and partly decomposed fibers of meat and particles of vegetable food. In cancerous cases, the liquid may be of a chocolate or coffee-ground color, from the presence of altered blood pigment and corpuscles. Allowed to settle in a test-glass, the upper portion is usually frothy, the middle portion is a slimy liquid, while the sediment contains the débris of food, numerous epithelial masses, exudative products and microbic organisms. Among these, sarcinæ ventriculi and yeast

cells are commonly present, giving rise to fermentation that continues in the vessel, sometimes causing it to overflow like a fermenting beer keg. Chemic examination reveals the presence of lactic, butyric and acetic acids, together with peptones, unchanged albumin, sugar and starch.

On inspection of the patient an unusual swelling of the abdomen, often extending below the navel, is visible. When there is considerable emaciation, it is sometimes possible to discern the outlines of the stomach through the abdominal wall. When there is obstruction of the pyloric orifice, the peristaltic movements of the muscular coat from the cardia toward the pylorus, are occasionally visible in like manner. These movements are sometimes attended with considerable uneasiness, which has been described as *peristaltic restlessness* of the stomach. Their appearance below the navel is diagnostic of gastric dilatation, because in a healthy condition the lower border of the organ lies wholly above the umbilicus. By careful pressure or percussion over the stomach it is sometimes possible to make out the line of the greatest curvature of the organ as it lies in the lower part of the abdomen; and on smartly shaking the patient, it is often possible to hear loud splashing sounds, caused by the commotion of air and water in the stomach. This, however, is not a diagnostic symptom, for the reason that similar splashing and gurgling sounds are often produced in stomachs that are not enlarged—notably among women who lace themselves tightly. But, in connection with other signs of dilatation, it is a valuable symptom. Sometimes the stomach contains so much air and water that actual fluctuation can be detected when the palm of one hand is pressed against the side of the abdomen while with the other hand the opposite side is tapped with short, quick strokes from the ends of the fingers.

Percussion of the abdominal wall, after inflation of the stomach with gas, affords the most satisfactory evidence regarding its dimensions. Only in the exceptional cases of congenital enlargement, or low position of the viscus, will the greater curvature of the stomach descend to the level of the navel when distended with gas. Air may be forced through a syphon tube by the aid of a bellows, so as to fill the cavity of the organ; but by far the most convenient method consists in the administration of a glass of water in which two teaspoonfuls of sodium bicarbonate have been dissolved. This should be followed by an equal quantity of tartaric acid similarly dissolved, or by the juice of one or two lemons, diluted with sufficient water. Unless there be evidence of severe ulceration in the gastric walls, this treatment is devoid of danger, and seldom causes any feeling of inconvenience on the part of the patient. Occasionally, the gas passes, as soon as it is liberated, into the intestines, indicating pyloric insufficiency, but it is almost always retained in the stomach, which distends like a rubber balloon, so that often its outlines can be readily discerned through the abdominal wall, or can be easily defined by percussion. If the ear, or the stethoscope, be applied to the abdomen, it is possible to hear the bubbling and sizzling that is produced by liberation of gas in the liquid contents of the stomach. Sometimes it is difficult to decide whether resonance in the abdomen is due to dilatation of the stomach, or to distension of the colon with air. In such doubtful cases, the colon may be filled with water from a fountain syringe, while the stomach is inflated with gas. Or the experiment may be reversed by causing the patient to drink a considerable quantity of water after the colon has been inflated by pumping air into the rectum with a spray-balloon.

Other ingenious methods of determining the dimensions of the stomach have been devised, and some of them give very satisfactory results in the laboratory; but in private practice, so far as possible, it is desirable to avoid the use of sounds and stomach tubes until you have secured the confidence of the patient, and are fully assured of his loyalty under all circumstances. Some idea of the capacity of the stomach might be obtained from the administration of measured quantities of water, were it not the fact that in many cases the patient feels so much discomfort from drinking, even before the limit of repletion is reached, that it is impossible thus to measure the cavity of the organ. Dr. Einhorn has devised an ingenious method of electric illumination of the gastric interior so that its outlines become visible like those of a shade over the flame of a lamp. But the apparatus is expensive, and its use necessitates the disagreeable introduction of a tube through the esophagus.

In all cases of gastric dilatation the functional power of the stomach is seriously reduced. Six or seven hours after a meal the healthy stomach contains no trace of food; but when dilatation exists, remnants of previous meals, sometimes even after the lapse of several days, can be brought up from the depths in which they have stagnated. The absorptive power of the mucosa is reduced, under such conditions, so that if iodid of potassium be taken, instead of ten or fifteen minutes, as in health, it will be two hours before the drug can be detected in the saliva of the patient. As a consequence of the diminished mobility of the muscular coat and the resultant stagnation of food, the stomach becomes a receptacle in which takes place an inordinate fermentation of carbohydrates, and even putrefactive decomposition. Hence the appearance of alcohol, carbonic acid, marsh-gas, acetic, butyric and lactic acid in the gastric contents. If a carcinoma be present, the gastric juice will cease to contain free hydrochloric acid; but when dilatation is due to obstruction by round ulcer of the stomach, the opposite condition obtains, and there will be found an excess of the free acid.

Constipation of the bowels is usually experienced; partly because of general intestinal atony and partly by reason of vomiting, when that occurs, so as to hinder the entrace of food into the intestinal canal. For similar reasons the quantity of urine is often reduced. Its reaction is usually alkaline and its solid constituents are diminished, just as they are in any case of slow starvation. The sediment contains triple phosphates and the phosphate of calcium. With the appearance of cachexia, traces of albumin and peptones are discovered in the urine.

As the disease progresses the symptoms of indigestion and mal-nutrition become more pronounced. The patient feels incapable of effort and complains of oppression in the precordial region, with palpitation of the heart and breathlessness on slight exertion. These sensations are aggravated by the accumulation of gas in the stomach, crowding the diaphragm upward against the heart and lungs so that the apex beat may be found in the fourth intercostal space, while the upper surface of the liver approaches the level of the right nipple.

The course of the disease is lingering and tedious.

If dependent upon cancerous obstruction of the pylorus, its duration will be limited only by the termination of the carcinomatous disease. Under other circumstances a miserable existence may be prolonged indefinitely. Sometimes death occurs after an experience of painful cramps in the muscles ushering in collapse and death from exhaustion. This mode of dissolution is probably the result of profund auto-intoxication with products of decomposition formed in the alimentary canal. In such intoxication of the nervous system is to be found the explanation of the attacks of tetany that are sometimes experienced during the course of dilatation of the stomach. The danger of death, in such cases, is very great—the majority of them prove fatal. In certain other cases, where convulsive phenomena are absent, the brain shows evidence of disturbance in the form of delirium, perversion of sensation and transient mania or melancholia.

The recognition of well-marked dilatation of the stomach is not difficult. Congenital enlargement or normally low position of the stomach may be differentiated from morbid dilatation by the fact that they are not attended with ill health. Gastric dilatation that is dependent upon duodenal obstruction may be recognized by the fact that the patient vomits bile—since the obstruction is usually placed below the orifice of the common bile duct—while in cases of pyloric stenosis the vomited matters are free from admixture with the biliary excretion.

The prognosis in this disease is always doubtful. When dilatation is caused by malignant obstruction of the pylorus, death is inevitable. Under the most favorable circumstances, relapses are frequent and cures are uncertain.

For the treatment of gastric dilatation, the first thing to be attempted is the emptying of the stomach. This can be most easily and safely accomplished by the use of a soft rubber stomach tube, to the upper end of which a funnel is attached. Considerable difficulty usually attends the introduction of the tube before the patient has become accustomed to its intrusion into the pharynx, but with a little practice he learns to swallow the pliable syphon without irritating the nervous centers for retching and vomiting. Once carried to the bottom of the stomach, warm water, of a temperature of about 90 degrees F., should be poured into the funnel until it ceases to flow rapidly into the tube, or until the patient complains of too great pressure. The funnel should then be inverted and lowered below the level of the stomach, the tube being compressed by the thumb and finger of the operator, until the necessary adjustment of everything has been completed. Removal of pressure from the tube is then promptly followed by the evacuation of the contents of the stomach through the tube which is thus converted into a syphon. If the opening of the tube should be obstructed by the entrance of fragments of food, it may be cleared by pouring a little water into the funnel or by raising it up and down or by making pressure with the hand over the gastric region. So long as the water that returns is turbid the operation should be repeated—filling and emptying the stomach until its cavity is thoroughly cleared. It may then be washed out with a solution of table salt—a drachm to the pint, or with a similar solution of Carlsbad salt—a half drachm to the pint. In this way the stomach may be completely relieved of its fermenting contents. The syphon tube is preferable for this purpose rather than the stomach pump, which is less convenient and much more liable to wound the gastric mucous membrane. In all these operations great care must be taken to avoid violence to the mucosa, otherwise the appearance of detached fragments of membrane in the wash-water will not be uncommon. Certain experts would have us believe that such evidences of injury are symptomatic of special forms of disease within the stomach, but this is doubtful. Under any circumstances the passage of sounds and tubes into an unsophisticated stomach is no trifling matter. Patients sometimes become convulsed and unconscious when thus treated for the first time; but, usually, they soon become accustomed to the contact of a syphon tube and find great relief through the removal of the offending matters. The renewal of decomposition may then be at least delayed by the administration of drugs that arrest fermentation, such as sodium salicylate, resorcin, creosote, benzosol and carbolic acid. The daily use of the syphon should be continued until satisfactory evidence of improvement is apparent. It may then be introduced every other day, and with less frequency as the case progresses more favorably. In all cases the treatment must be continued for a long time, and when the disease is caused by pyloric obstruction it is impossible to lay aside the tube before the end of life, unless the difficulty can be removed by a surgical operation upon the pylorus. Patients can be taught to introduce the tube and to wash out the stomach themselves, but as a general thing the physician should maintain a careful supervision of the case in order to prevent mechanical injury of the food passages or to avoid the effects of ignorant use of healing methods.

Having provided for the cleansing of the stomach, it is needful to take measures for increasing the tone and vigor of its muscular coat. For this purpose the patient should remain in bed for several hours after each operation of lavage, and should apply to the epigastrium and gastric region an ice bag wrapped in a napkin. A sponge bath with cold water should be taken every morning on rising and on retiring at night. If so situated that he can use shower baths of cold water they should be taken every day—preferably in the morning. If the patient is feeble and oversensitive he should stand in a little warm water while taking the bath. Daily massage of the whole body is another valuable means of increasing the muscular tone of weakly individuals. Light gymnastic exercises and walking in the open air must be enjoined, and the patient must be taught to aim at procuring at least two hours of such exercise—an hour in the morning and another in the evening. If the heart and kidneys are free from disease, horseback exercise and moderate bicycling will be found useful. The daily application of faradic electricity—placing one pole behind the spleen and moving the other over the region of the stomach for five minutes once or twice a day—is often very beneficial. Good results are also derived from intra-ventricular faradization—passing one electrode into the stomach while the other is applied externally in the usual way. But one should be very sure of the loyalty of his patient before employing this method.

The patient must receive his food in small quantities every two hours. Liquids must be largely withdrawn from the diet list. Thirst may be relieved by rectal injections of cold water thrown high up into

the colon with a long tube. Sugar, starch and fat should be given in very small quantity, because of their tendency to fermentation. The food should consist chiefly of tender meat well minced, toasted bread, milk, soft-boiled eggs, oysters and concentrated broths. As improvement appears a larger variety may be gradually introduced.

In the administration of medicine it is necessary to provide for an increase of motor and digestive power while endeavoring to prevent the process of fermentation in the gastric contents. For the first object, one-fiftieth of a grain of nitrate of strychnin may be injected hypodermically every six hours. Ten drops of dilute hydrochloric acid should be taken in four ounces of hot water after the three principal meals each day. One-half hour before each of those meals the patient should take five grains of salol or of salicylic acid, or a grain of resorcin or of carbolic acid, or five grains of sodium hyposulphite, to check the fermentative process during the approaching period of attempted digestion. As soon as the patient begins to feel able to remain for a considerable time in the open air the anemia that is present may be controlled with large doses of carbonate of iron.

Recently, the aid of surgery has been invoked with some degree of success in the relief of those forms of gastric dilatation that are dependent upon stenosis of the pylorus. Notwithstanding the high degree of mortality, it is sometimes the only resource, and, fortunately, with increasing experience the death rate is slightly diminished. In certain obstinate cases without pyloric obstruction, the operation of folding the anterior wall of the stomach upon itself and sewing the border of the greatest curvature to the margin of the upper curve of the organ—just as a sailor takes a reef in a sail—has been performed with tolerable success.

TREATMENT OF PERIUTERINE SEPTIC DISEASES.

Read at the Richmond meeting of the American Association of Obstetricians and Gynecologists.

BY W. E. B. DAVIS, M.D.

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Only recently has the extremely radical procedure of hysterectomy been practiced in this country for septic diseases of the internal genitals. A wave, which had its origin in Paris at the hands of Péan, aided by Richelot, Segond, Jacobs and others, reached our shores three years ago and has found a considerable following among our leading operators. There has been much rivalry for some years in this country as to who could do the largest number of hysterectomies most successfully, but I will not say that it is possible this innovation was more readily embraced as it afforded great opportunity for such ambitious ones, who had almost ceased to be interested in the more simple operation of salpingo-oöphorectomy, to increase their cases of hysterectomy more rapidly. They claim that there is no use in leaving the uterus behind after the removal of the appendages; that "in every operation for septic diseases of the generative organs which demands the removal of the tubes and ovaries hysterectomy should also be performed, unless there are plain contradictions forbidding it."

It should be the aim and pride of the surgeon to preserve everything consistent with thorough surgical work, and not to sacrifice important organs because it can be done with only a small mortality. We are told that the uterus has no function after the removal of the appendages, but this has not been demonstrated; and, on the contrary, we know that the sexual life of the woman is very much better preserved by leaving the uterus, and that the mental effect is also much better. A slow convalescence, or even a second operation, is preferable to its removal, unless very much diseased. It is a reflection on the correctness of the reports of complete recoveries of such a large per cent. of cases by many most excellent surgeons, when the uterus was not removed, to accept the argument now being used in favor of hysterectomy in all these cases. As stated at the last meeting of the AMERICAN MEDICAL ASSOCIATION, "I can not agree with Dr. Sutton and others that pus in the tubes is due to gonorrhea in 75 per cent. of cases. I think that puerperal infection is the cause of more than 50 per cent. Tubercular infection is rarely the cause, and is not so important as has been claimed. However, the importance which has been attached to gonorrhea is against the argument for the removal of the uterus, as the infection from this source is not deep and can be removed with the curette. Because some cases are not completely cured by the removal of the appendages is no argument for hysterectomy in every case where the bilateral operation is required, for nearly all these can be relieved by a thorough curettage. Some large uteri will require, in addition to this, a high amputation of the cervix. Only a small number will need hysterectomy."

It is a notable fact that some of the surgeons who claimed most for curettment of the uterus a few years ago and who taught that total ablation of the appendages was seldom necessary are now the most enthusiastic advocates of hysterectomy. It is granted that there are some cases in which it is best to remove the uterus, those in which the uterus is flaccid and its walls infiltrated with pus, surrounded with pus tubes and ovarian abscesses. However, such cases are rare. Tubercular infection of the uterus, too, is sufficient cause to require its removal. Extreme injury and mutilation of the organ in removing the tubes and ovaries would also call for the operation. Vaginal incision for the drainage of pus in the pelvis not confined to the tubes and ovaries has been practiced for a long time with very gratifying results. This procedure is so old that it is hard to say when it was not resorted to. Such cases would recover, almost without exception, from the immediate attack and a large number recovered completely and bore children afterward. This result was due to the drainage of the tube or ovary through the peritubal and periovarian abscess, just as cases of appendicitis are cured by the rupture of the diseased appendix producing an abscess, which is evacuated by the surgeon, the appendix being drained through the abscess. In cases of abscess from lymphangitis and phlebitis this treatment was all that was required, but cases of abscess due to the tube or ovary were not all entirely relieved, due to the fact that the pus tube or ovarian abscess was not drained satisfactorily.

More recently pus tubes and ovarian abscesses have been incised and drained through the vagina with permanent recoveries in a good proportion of cases. These are the very cases where the vaginal operation and hysterectomy have been commended so highly by the French surgeons. Yet a large per cent. of these cases can be relieved by vaginal incision and drain-

age. If not relieved the patient's condition will be made better by getting rid of the pus, and later on an abdominal operation can be done and the patient cured by the removal of the appendages—and perhaps of one side only.

The French surgeons, in some cases, when unable to remove the diseased tubes and ovaries after hysterectomy, have been contented to open the masses containing the diseased appendages and to pack with gauze. The drainage in such cases has brought about complete cures. The same result could have been accomplished without the removal of the uterus, by vaginal section and the breaking up of adhesions with drainage. I would not be misunderstood as believing that all cases can be cured by incision and drainage, but so large a per cent. can be relieved, without the loss of the uterus and adnexa, our cases should be given the benefit of this conservative procedure before more radical measures are resorted to. Especially should this be done in young women, to whom the loss of the appendages and uterus means the loss of so much that is necessary to their happiness. This treatment has been highly commended by Henrotin, Pryor and Kelly, and my own experience with it, which is limited, has been so satisfactory that I am convinced of its great value and the necessity of its more general adoption. The following is the plan I have adopted:

Peritubal and periovarian abscesses.—When there is a considerable collection of pus and the patient is suffering from marked sepsis the uterus is not curetted and no attempt is made to find the tube or ovary. An incision is made into the abscess, hugging the posterio-uterine wall, and after thorough irrigation gauze is packed in the cavity, the vaginal incision being well filled so as to keep a large opening to allow the gradual withdrawal of the gauze—permitting of the escape of any collection that may occur in the cavity. The vagina is also filled with sterilized gauze. The gauze in the vagina is removed in twenty-four hours and from the abscess cavity in forty-eight hours. A rubber tube is introduced into the abscess cavity at the end of a week and kept in place from four to eight weeks. Douches are given twice a day after the removal of the gauze from the vagina. Water is passed through the tube twice a day. Carbolic acid may be used with advantage in the wash. In small peritubal and periovarian abscesses the same treatment should be adopted as in cases of tubal and ovarian abscesses, which I will describe. If there is a considerable mass some weeks after the drainage of large pelvic abscesses (peritubal and periovarian abscesses) the same treatment will be indicated as for tubal and ovarian abscesses.

Tubal and ovarian abscesses.—In these cases the uterus is always curetted and pure carbolic acid applied to the cavity. The cervix is grasped by a strong vulsellum forceps and pulled down and lifted to the front. An incision, with scissors, is made in the posterior vaginal wall, hugging the cervix and large enough to admit two fingers. When the peritoneum is reached the mass or masses can be easily outlined by bimanual palpation and can be opened with scissors or uterine forceps, the finger being used as a guide. The cavity is thoroughly dried with gauze and irrigated. If the general abdominal cavity is entered it is best to make the opening large so as to prevent a secondary abscess. Gauze should be packed into the tube and extend into the abdominal cavity, a large quantity being used in the vaginal incision. The vagina should also be packed with gauze. The gauze is removed from the vagina in forty-eight hours, and from the abdomen and tube in five or six days, except the withdrawal of a few inches each day to keep the vaginal opening patent for the escape of fluid. A rubber tube is introduced after the removal of the gauze and managed as directed for peritubal abscess. As Henrotin says: "It seems only reasonable that such operations may be successful, even in the most chronic forms of pyosalpinx. What happens in such cases? Septic material traveling up the Fallopian tube, when the process is not too rapid, finds itself arrested at the abdominal opening by a closure of the ostium abdominale. An abscess cavity is developed in the walls of the tube proper. After a time the uterine end becomes closed, and then we have independent pus sac, not communicating with either the serous or the uterine cavity. This may rupture into the fold of the broad ligament and work its way toward the vagina. If widely opened and drained and packed, after a time all the so-called pyogenic lining membrane disappears, granulations fill the gap, the Fallopian tube becomes obsolete and the patient is cured."

Hydrosalpinx and hematosalpinx should be dealt with as outlined for pyosalpinx. I have treated some cases of ectopic gestation by this method, and was recently consulted by a young woman who had become pregnant in the uterus after recovery from such an operation for pregnancy in the right tube.

Pelvic masses following an abortion or delivery at term should be treated in this way. Pus should not be waited for. I have treated a good number of such cases by incision and gauze packing before pus formation, and thus cut short a protracted illness.

I have operated a few times in cases where the uterus was retrodisplaced and bound down by adhesions. The adhesions were broken up, the uterus replaced, the tubes and ovaries lifted up and gauze packing resorted to as heretofore described. The results so far have been quite satisfactory, but I am of the opinion that a large number of such cases will require salpingo-oöphorectomy before they are entirely relieved.

When double salpingo-oöphorectomy is necessary the choice of operation will depend largely upon the decision as to the disposition of the uterus. If the uterus is to be removed, in such cases the vaginal route could be adopted with advantage in a good proportion of operations. Fortunately that is not necessary and hence the abdominal operation is preferable, "as the aid of positive sight is given, thus affording a wider field of operation and an opportunity for conservatism."

EFFECTIVE REMEDIES IN TYPHOID FEVER.

BY THOMAS B. HEIMSTREET, M.D.
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About five years ago, being called to a patient who had prodromic symptoms of typhoid fever, and insisted on some prompt remedy, I gave him a half-grain pill of hydrarg. protiodid, knowing it to be one of the most powerful antiseptics and having frequently prescribed it in cases of specific disease, for several days in succession, without causing any trouble. After one pill daily for two days he was so much improved

that nothing more was given and on the fourth day he went out and remained well.

Later, in two similar cases, it was used with like results. Some time after, I was sent for at night to see a young man who had diarrhea and had been sick for a week, but not in bed. His family had considered it as merely a bilious attack, until the delirium alarmed them. I found him with a temperature of 104, pulse 118, wandering delirium and distinct rose-colored eruption. Anticipating that if he recovered quickly, that the diagnosis might be doubted, I caused the parents to note the various symptoms, and being educated people they fully understood. I gave that night a half-grain pill of hydrarg. protiodid, prescribed phenacetin 5 grs. and a mouth wash of sodium salicylate in water. Next day his temperature was morning, 101, evening, 102.5. Number of passages the same but thicker. No delirium, tongue moist; gave at night another half-grain protiodid pill. Third day, morning temperature was 100, evening, 101.8; brain clear, tongue clearing, passages less in number and contained some solid matter. Pill and phenacetin were omitted. Fourth day, morning temperature was 99.5, evening 101.6; three solid passages, tongue nearly clean, but red. Fifth day, morning temperature was 99, evening 101.2. Two nearly solid passages, felt and looked well. Sixth day, morning temperature was 97.8, subnormal, evening 99.6. Seventh day, morning temperature was 98.5, evening 99. He felt well, was up all day and had two nearly natural passages. Two days after he went out and had no further trouble. This case was in the second week of typhoid fever and is a fair example of the general course of symptoms under the use of mercuric protiodid. Two pills were sufficient to determine recovery in nine days. I have since used this remedy in typhoid cases, some with pneumonic complications, and found that in ten days or less from the time of taking the first pill, they were practically well. None were seen later than the second week, by that time a person is sick enough to call a physician. As what would otherwise have been a third week was one of convalescence, I can not say how it would act late in the disease, but should not hesitate to use it, perhaps in smaller doses combined with opium or whatever else seemed indicated. If ulcerations were present they would be converted into aseptic ones.

Fears of a hypercathartic action seem groundless. In only one case griping happened, which soon passed off with a nearly solid evacuation. The old method of "locking up the bowels" simply converted the individual into a vast bacterial culture field. It is the typhotoxin which causes the diarrhea, and when the bacilli are eliminated or destroyed, the passages gradually become thicker and approach their normal condition.

But few doses are required; I have never in any one case, given more than three half-grain and two quarter-grain pills at intervals of twenty-four to thirty hours. They are small and if placed on the center of the tongue, and a drink of water taken, are easily swallowed. The pill form is preferable, as it is not likely to all dissolve in the stomach, but acts as a local antiseptic in passing through the intestines. Mineral acids are incompatible.

Miquel found mercuric iodids to be the strongest of all antiseptic substances. Sternberg places mercuric biniodid first; bichlorid second; protiodid third, and rates them all lower than Miquel.

The Woodbridge carbonate of guaiacol treatment is at present prominent and, I fully believe, will do all that is claimed for it.

The chlorids are valuable from the strong affinity of chlorin for hydrogen, causing it to break up and destroy morbid material. In the JOURNAL of March 14, 1896, Dr. W. L. Schenk cites cases of typhoid fever showing the direct effect of tinct. chlorid of iron and hydrochloric acid, evidently taken in volume and thereby reaching the seat of the disease. Previous to using the protiodid I found the following gave the best results. Chlorid of lime 10 or 15 grs. to a pint of water drank freely, the intent being to fill the intestinal tube with it, as astringents and aromatics for tympanites and diarrhea, cinnamon and clove teas; morphia and potassium bromid for delirium; phenacetin as an antipyretic; castor oil and turpentine as needed. Some cases seemed aborted by the chlorid of lime solution, the bowels being kept open by castor oil and turpentine. The antiseptic powers of some of the above remedies is as follows: Nissen found that the typhoid bacillus and the cholera spirillum are destroyed with certainty in five minutes by a solution containing 0.12 per cent. of chlorid of lime. Kitasato states that the same germs are killed in five hours by a 12 per cent. solution of potassium bromid. Cadéac and Meunier found that essence of Ceylon cinnamon kills the typhoid bacillus in twelve minutes; essence of cloves in twenty-five minutes. In bacterial diseases there is a tendency to rely on quinin, founded on its positive antidotal effects in malaria.

The plasmodium malariæ of Laveran is an animalcule of the monad family, which enters and destroys the blood corpuscles, while the bacteria are vegetable microörganisms multiplying rapidly, the pathogenic species secreting virulent poisons. The cause and actions differ. Quinin is not a strong germicide. Most authors have considered it useless in fevers, some as an unsafe remedy. Bartholow says "the subsultus and delirium are increased by it." I remember a case, over twenty-five years ago, in which mania, coma and death in a few hours, was the sequel of a 10 gr. dose of quinin. Congesting poisoned blood at the base of the brain can hardly be beneficial. As some bacteria have less resisting power than others, notably that of croupous pneumonia stated by Sternberg, its discoverer, to be "very sensitive to the action of germicidal agents," it is not improbable that some of the previously mentioned substances would be efficient in that disease and perhaps in what has some similarity, membranous croup.

In 1862, Dr. A. Tweedie suggested that the rarity of typhoid fever after fifty years of age (being about 1 per cent. of cases reported), was due to the atrophy of Peyer's patches, which takes place at that time of life.

CONTINUED AND EPHEMERAL FEVERS. A NOTE ON THE SERUM TEST FOR TYPHOID.

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There have been two disease names in common use which are nothing but names, and are in no true sense of the term diagnoses. These are *ephemeral* and *continued* fever. Cases of this nature (or of these natures?) may be explained as due to intestinal fer-

mentation or to some other form of sui-intoxication, and they have been regarded, respectively, as abortive and atypical manifestations of some other disease. In some parts of the country, continued fever is regarded as malarial; in Buffalo there is seldom any suspicion of malaria, since typhoid is, for practical purposes, the only definite protracted but acute fever, aside from the exanthemata and miliary tuberculosis. The writer does not care to discuss the merits of the arguments for and against classifying ephemeral and continued fever as manifestations of typhoid. Repeatedly have febrile cases been diagnosed as typhoid from the temperature curve, the subjective symptoms and the prevalence of this disease, and have disproved the diagnosis—at least so far as a typical course of the disease is concerned—by defervescing within a week without producing the cardiac weakness or conferring the immunity of the genuine disease. The writer has seen such cases in which the diagnosis has been confirmed by four or five physicians. Again, there are cases which have had fever for weeks, which have been kept on typhoid regimen and which have finally recovered, but which have never shown an abdominal spot, which have not been marked off into periods by differences in the temperature range, which have shown no delirium nor other evidences of the typhoid state. Are these typhoid or not? The difficulties of cultivating and of differentiating the typhoid bacillus and the trouble of making routine bacteriologic examinations, have thus far left the question to the arguments of theorizers.

A short time ago, the writer was asked to see J. D., aged 20, male, single. He had been well till the day before, but now complained of pain in head and back, of slight constipation and of chilly sensations. At 4 P.M., the pulse was 90, the temperature 100.4 degrees F. Physical examination was negative. The next day at noon the pulse was 81, the temperature 99.5 degrees. At 4 P.M. the temperature was 100.2 degrees. On the third day, at noon, the pulse was 62, the temperature 98.5 degrees; at 4 P.M., 98.7 degrees; at 9:30 P.M. 99.3 degrees. Thereafter, the temperature was normal, and after a day or two, the patient was allowed to get up. During the fever, milk diet and intestinal antiseptics were employed. The urine of the second and third days of attendance showed what seemed to be a plain Ehrlich reaction, namely, a marked garnet-red ring. The first sample also showed a little indican, otherwise the urine was practically normal. The serum test, applied by Dr. Frank J. Thornbury of the University of Buffalo, resulted negatively from blood taken on all three days of the fever. The Ehrlich test was certainly misleading here. It is possible that some one more expert in this test would have said that the shade of red was not the proper one on which to base a diagnosis. Such statements are sometimes seen, but they only go to show that the test is worthless except in the hands of those who have opportunities for extensive observation, while authorities apparently equally good have reported, as the writer has observed, marked Ehrlich reactions in urine from non-typhoid patients. In contrast with this, the results obtained from the examination of blood serum seem, from the reports of Johnston and others, to be almost positive, while the technique is simple and the test conspicuous.

Last fall, the writer had what he supposed to be a case of typhoid fever, though the spots noted were not absolutely typical and the temperature was comparatively low after the first few days. The favorable temperature range was, however, attributed to the use of intestinal anti- and asepsis. The case was somewhat protracted for this method of treatment, a temperature of about 99.5 degrees persisting for a month after the subsidence of serious symptoms, so that the possibility of tuberculosis or of malaria was entertained. Although the parasites were not demonstrable in the blood, the case yielded to quinin after a total duration of about ten weeks from the beginning of the typhoid (?) fever. In this case, indican was absent. The Ehrlich test, through a misprint, was performed with sodium nitrate instead of sodium nitrite, hence its failure is not significant. In February, two samples of serum were examined by Dr. Thornbury, with negative result. It is questionable what is to be considered the minimum duration of antitoxic material in the blood after typhoid. In another case treated by the writer, Dr. Thornbury demonstrated the reaction two years and a half after convalescence, and much longer persistence has been noted by him as well as by others. At least, the result throws some doubt on the diagnosis of typhoid.

The serum test for typhoid is one which should be added to the repertoire of all municipal boards of health, since neither the expense nor the labor involved compares with that for the diphtheria test, and since very little care is necessary in transmitting the suspected material to the bacteriologist. If future study shall confirm the argument of those who have upheld the individuality of ephemeral and of continued fever, the profession will be in a position to attack the problem of the nature of these diseases and to determine whether they are due to specific or varying causes, and whether they are identical except in duration.

REPORT OF SEVENTY-SIX CASES OF CATARACT EXTRACTION, WITH REMARKS.

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Although the operation for cataract extraction is the most important in the field of ophthalmology, still it may not require more, and probably not as much skill and judgment as many other eye operations, but the beneficial results of restoring vision to the blind are so great and marvelous to the patient and gratifying to the physician, that the operation takes first rank in surgery and its value can not be overestimated.

In this paper I wish to report the results in seventy-six consecutive cataract extractions, including complicated and uncomplicated cases, that have been done by me since November, 1891, in individuals ranging in age from 18 months to 87 years.

In all cases where the party has passed the age of 25 or 30 and the opacity interferes with useful vision, whether the cataract is mature or not, it is my practice to remove it.

However, some of the cortex is likely to be left behind, but experience has taught that when it has free access to the aqueous humor, absorption rapidly takes place. I do not think that any who have tried it will regret the removal of an immature cataract. I prefer operating with the patient on a table or something about that height, and as soon after the operation as possible get the patient into bed, where absolute

rest may be had. In the seventy-six operations a general anesthetic was not used in a single instance, and today is rarely ever resorted to by any oculist in cataract extractions, but, of course, occasionally it is indicated. Two fresh cocain solutions are made, one 4 per cent. and a 10 per cent., the cocain being dissolved in a saturated boracic acid solution. Instillations of the 4 per cent. are begun about twenty minutes before operating, several being made during that time. And before beginning the operation two or three drops of the 10 per cent. is used. The lids are thoroughly cleansed with soap and water, followed by douching outside and inside the lids with a bichlorid solution (1-6000). To prevent the corrosive action on the sublimate on the instruments, the eye is deluged with boric acid solution. Hands and finger nails are made scrupulously clean. All instruments are carefully sterilized by boiling and then placed in an alcohol bath, and by the assistant again dipped in boiling water when handed to me. Usually the operation on either eye is done while standing behind the patient, using the right and left hands, but occasionally I find it better to do the right eye standing behind the patient and the left standing in front. Fixation forceps and a spring speculum with stop screw is preferred. In nervous cases the speculum, or rather lid elevator, invented by Dr. Edward Swasey of Worcester, Mass., will be found a most useful instrument. With this the upper lid is held completely out of the way without exerting the slightest pressure on the eyeball; the lower lid is kept back by the fixation forceps. With this in place it is impossible for the patient to close the eye. The instrument is made by Geo. Tiemann & Co., New York. The incision is made upward with the Graefe knife in the limbus, and is made to include about two-fifths of the circumference of the cornea. This gives an opening large enough to permit of the easy exit of the lens. The Graefe cystotome is used to open the capsule; the edge of the short fine hook being made very sharp, is carried under the margin of the iris, bringing it across the pupil, making the opening as large as possible. If I am using the spring speculum, it and the fixation forceps are removed as soon as capsulotomy is done, thus, in a measure, preventing the rupture of the zonula and escape of vitreous when ready to remove the speculum after exit of cataract.

I impress upon the patient the necessity of not tightly pressing the lids together, as is the tendency after being stretched apart, but let them close slowly and gently. In expressing the lens the tortoise-shell spoon is generally used by pressure on the lower border of the cornea. And sometimes counter-pressure above the wound, which appears to make the escape of lens easier. It is made steadily until the lens has passed its greatest diameter, and then the pressure is released and the spoon follows the lens upward over the cornea, causing as much of the soft cortex to escape as possible. If much lens substance remains an attempt is sometimes made to remove it by Weeker's spoon or lavage with a boric acid solution, but usually it is left alone as it is rather quickly absorbed, and I have seen it give rise to no bad results; the restoration of good vision being simply retarded. The presence of cortical remains is recognized by the pupil not having become quite black, or the vision not being as good as it should be. Oblique illumination may also be used for its detection, or an examination of the removed cataract. In cases where the iris remains in the wound or is partially prolapsed I endeavor to replace it by gently manipulating the upper lid of the closed eye, and where not successful in this way the spatula is used, and by this method I have never experienced any of the bad results claimed by some of introducing the spatula into the anterior chamber.

Too much importance can not be attached to the toilet of the wound; every particle of blood clot, tag of capsule, etc., are carefully removed. The lips of the wound are made to lie in as close apposition as possible, and it usually can be done so perfectly that it is difficult to see where the incision has been made. In every case of simple extraction I formerly used a drop of a 1 per cent. eserin solution, but this has been abandoned excepting in cases where there is a possible paralysis of the sphincter in the passage of the lens. In a few cases after the use of eserin iritis has been observed, but it is a question whether the eserin was responsible for it or not. In dressing the eyes a little vaselin, made up with yellow oxid or bichlorid, is applied to the lids to keep them from sticking together, then a pad of gauze is placed over both eyes, then a wad of cotton, and over this the four-tailed bandage as used in the Royal Ophthalmic Hospital, London, and lastly the shield suggested by Dr. Ring.

Unless pain is complained of in the eye or the bandage is too tight, or irritation of some kind is present, no inspection is made until about forty-eight hours have elapsed. If the eye is doing well, both are washed and re-dressed as at first. On the third day the use of atropia is begun and continued twice daily. The eyes are kept bandaged for four or five days, or until the wound is thoroughly healed, for, if the well eye is left uncovered and moves about, irritation of the operated one will be caused and delay the healing, and possibly produce other complications. The operated eye is kept covered until about the eighth or tenth day, and then smoked glasses prescribed. The fitting of reading-glasses is deferred until all redness has passed away from the eye. The simple extraction is always done where possible; but in cataract with glaucoma and extensive posterior synechia, iridectomy becomes necessary, as well as from accidents occurring during the operation and other indications; some of which may be a severe wounding of the iris when making the incision, great difficulty in expelling the lens, a persistent tendency of the iris to prolapse, etc. In cases of a thickened and opaque anterior capsule, as much as possible is removed with the forceps.

Of the seventy-six extractions, ten were of a complicated nature, including detachment of the retina, three, none of which could be determined before operating; foreign body in eye, one; total posterior synechia, one; adherent leucoma, one; dislocated lens, one; penetrating wound, one; chorio-retinitis, one. disseminate choroiditis, one. In one case of detached retina, the projection was so imperfect and the results of visual improvement so uncertain, that it was only at the request of the patient that I consented to remove the lens, and that for the cosmetic effect alone. Almost complete detachment was found, which probably occurred some years previous from a piece of flying wood, as from that time he dates the beginning of impaired vision. After the operation perception of light was better and by turning the eye on[illegible] could count fingers. In the other two [illegible]

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jection was fairly good, and after operating vision in one eye was 20–70 and the other 10–200. The results in the other cases of complicated cataracts were, foreign body 20–20, total posterior synechia 20–100, adherent leucoma 18–200, dislocated lens 20–30, penetrating wound 20–20, chorio-retinitis 10–200, disseminate choroiditis 18–200. In case of the foreign body it was found imbedded in the lens substance. In seven of the above cases iridectomy was done.

In my sixty-six cases of uncomplicated cataracts done by simple extraction the visual results were as follows: 20–15 in three eyes, 20–20 in twenty-eight eyes, or nearly 50 per cent. with full vision or better; 20–30 in ten, 20–40 in twelve, 20–50 in seven, 20–70 in one, 20–100 in two, 20–200 in two eyes, and in one case no vision. Two of these cases were zonular cataract in children, one 18 months old and the other 7 years, both boys. In both eyes of the infant I needled three times, getting complete absorption and perfect vision. In the boy discission was performed on the right eye twice and on the left three times, obtaining vision 20–15. An exceedingly small particle of opaque anterior capsule lies in the lower part of the pupil, but causes no inconvenience or deformity. The case that resulted in no vision was produced by the firm pressure of lids together, expelling lens and considerable vitreous and prolapse of iris, which was at once excised, but later it became incarcerated, covering the entire pupil. Iridectomy was done by de Wecker's method, but was unsuccessful. The secondary operation of discission was done in about one half the cases, in all of which vision was improved. Beside the above-mentioned cases, there was slight loss of vitreous in two cases of simple extraction, and in one with iridectomy, but the patients made good recoveries. Prolapse of the iris followed in three cases, and was excised in two, one eight days after extraction. Twice during the operation the iris fell before the knife and was wounded.

In looking over the report I find that about 90 per cent. of the operations were successful; that is, giving vision of 20–200 and better to about seventy of those operated on, which is about the usual average among good operators.

SURGERY ONE HUNDRED YEARS AGO.

AN HISTORICAL STUDY

BY DR. GEORGE FISCHER.

DEDICATED TO THE GERMAN SURGICAL ASSOCIATION.

TRANSLATED FOR THE JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION BY CARL H. VON KLEIN, A.M., M.D.

CHAPTER IV.—NOTICE ON HOSPITALS.

(*Continued from page 694.*)

The oldest, largest, richest and worst hospital in Europe was the *Hôtel Dieu* in Paris. It is said to nave been founded in 660 A.D. by St. Landry, the Bishop of Paris; it is certain that Louis the Good and Henry IV. enriched it considerably. The old building was situated on the Island of Notre Dame, the new one on the opposite side of the river, connected with the old part by a bridge. In 1783 the old house contained twenty-three halls, the largest of which accommodated 400 patients. There were almost always in the hospital about three or four thousand patients, sometimes even more, but there were only 1,233 beds. Therefore there were often four or five in one bed; it even happened that a dead man, two dying and a convalescent lay together. In spite of the order of the king that each one should have his own bed, and only when the hospital was overcrowded should two be put in one bed, it was thought sufficient to separate the patients by a board slipped between them so they could not touch each other. Patients were admitted without distinction; only those with skin diseases and syphilis were sent to Bicêtre. The surgeon on duty (*chir. de la porte*), who was changed every month, examined the new-comers. There were special wards for patients who had been operated upon, ophthalmia patients, the wounded and those with scurvy, although the medical and surgical patients, to whom hospital clothes were furnished, were often promiscuously put into the same room. There were 92 nuns with 50 novices and 18 other women engaged for attendance. The nuns dispensed the food, but troubled themselves so little over the orders of the physicians that many patients died simply because of the boundless disorder. They used 4,000 pounds of bread a day. Eight physicians and a chief surgeon (*chir. major*), with a hundred student surgeons, were entrusted with the treatment of patients. Of these, 13 were called surgeons internes because they had board and lodging in the hospital, and 15 surgeons externes, who ate in the hospital but lived outside. The other 72 did not enjoy these benefits, but must appear punctually for visits, which were made at six o'clock in the morning, in the winter at daylight, and at five in the afternoon. Two of the oldest internes were, after several years' service, called *gagnants maîtrise*, that is, they treated the patients by themselves and referred only the most important cases to the first surgeon for advice. This position they held a few years, when they were advanced to *maître*. As a rule there were more than 500 surgical patients in the hospital. Nevertheless the students learned little, because during the visits the chief surgeon did not remain long by a patient's bed, and seldom spoke. Most of the operations occurred in spring and autumn, often ten or twelve in one day. The bad plan prevailed here as in the other large French hospitals, of operating upon all the stone patients on a certain day; therefore many must wait weeks, even months, and in consequence of the bad air and food in the hospital they became much weakened. In 1761 Moreau performed fifteen operations for stone in the Hôtel Dieu in a single day. A few days before the operation they gave especially the younger patients worm cake, because many would be killed by the worms! The mortality was frightful, as we shall see later; the people died like flies in the infected air. This statement of the Vienna physician Hunczovsky was not exaggerated, and was confirmed by French authorities. The Academy of Sciences commissioned some of its members to make a report on the Hôtel Dieu (1786). They called attention to the fact that it was situated on a street where the whole day long wagons with wood and stone, sometimes 168 in an hour, were driven. For 4,800 patients there were only 2,000 beds, and at times six lay together. Here one found three wounded men in one and the same dirty bed, these three in delirium, who could maim or kill themselves in their frenzy. Convalescents lay between the sick and the dead. Two or three hundred wounded were crowded together in St. Paul's Hall, which was the sole passage to the kitchen and cellar. The operating room was situated close to this ill-smelling hole, and over the morgue. The French commissioners declared publicly, with the consent of the government, that the Hôtel Dieu was

the most unhealthful of all hospitals. Let us look at one more picture from the hand of G. Wardenburg in 1796, of this ill-famed house, called at that time, with the greatest irony, "*Grand hospice de l'humanité.*" Even before one passed the door of death, he was met at a considerable distance by a smell of cadavers. In the house, daily falling to ruin, the number of patients had decreased since the revolution to some 2,000 or 2,500 and, chiefly through the influence of Desault, more comfortable beds were in use. More than two patients were never in one bed, separated by a board. The nuns still held their powerful influence, and they were never more intriguing than here. The refuse was carried to the outhouses in narrow pipes, but they leaked, and a dreadful smell was the consequence. But most horrible of all was the fact that the morgue and the anatomic room were situated at the end of two wards, opening into them. The dead were all carried through these wards, and the odor infected everything. The low, dark operating room was just as bad, where the patients were operated upon by candle light on the clearest days. Smoky lamps burned at night. The noise of the street was so great that neither the internes could work quietly in their rooms, nor the patients find rest. Tenon reckoned that ninety-two carts and freight wagons were driven under the operating room every hour; for this reason Desault performed operations in the amphitheater. The Hôtel Dieu has him to thank for a better arrangement of the wards and distribution of provisions. At his instigation the archepiscopal residence, chapel and church were annexed to the hospital, and a great amphitheater erected in the chapel. Beside twelve physicians, for the most part unknown men who had received the positions by preferment, Peletan directed the surgical clinic at that time. The hospital also employed an oculist and a special truss-maker (*chir. herniaire*).

Next to the Hôtel Dieu, the Charité, later called *Hospice de l'Unité*, was the most important hospital in Paris for practitioners, as in the two were gathered generally the difficult surgical cases. It was the oldest of the thirty-two hospitals in France belonging to the Brothers of Mercy, who were themselves the physicians and surgeons there. The revolution drove them out because they would not take the oath, though the Charité brothers were everywhere among the best nurses. The hospital, with somewhat more than 200 beds, took no women patients and no patients with syphilis, contagious diseases or rupture; further, priests were excluded, because they could live from their masses, and soldiers because they were paid. All other sick and poor were admitted at any time, not, as in many hospitals, only on certain days and hours. The larger of the wards, which were all connected, were separated from one another by iron gratings, while the smaller ones communicated with the larger by open doors. The patient had his own bed; between two beds stood a basin which was cleansed between 2 and 3 o'clock at night. The monks also held free polyclinics which were attended by large crowds. In the Hôtel Dieu, indeed, there was a greater variety of surgical cases, but in the Charité the visits were much more thoroughgoing; each patient was examined daily. Unfortunately there was no special operating room, so that with the exception of stone patients, those with hare-lips and so forth, all the patients were operated upon in the beds. With the so-called Hospice de Charité, which was established in an old monastery, in 1779, for 120 patients, the experiment was first made to learn whether it would be advantageous to put a small hospital in every parish for the poor patients found within it. The Hospital of St. Louis was for contagious diseases, the Hospital of St. Anna especially for the plague stricken. The Hospice de St. Sulpice was among the the best hospitals, as was also the Hôpital Necker, which was founded at her own expense in 1778 by Susanne Necker, wife of the Necker afterward Minister of Finance.

Among the provincial cities Rouen, since 1754, had a Hôtel Dieu with 400 beds; there, too, several patients often lay in one bed. Le Cat officiated as surgeon, and after him his son-in-law David. Whoever, in this ill-smelling hospital, was not cured after a six-months' sojourn was taken to another hospital. In Brest the patients were so crowded in large, poorly ventilated halls, that people used to call the hospital "the grave of sailors." Lyons, Bordeaux and Montpellier had larger hospitals. There were also hospitals only for stone patients, for example in Luneville, where within fifty years 1,483 operations for stone were performed.

Let us end our travels in Northern Europe. *Stockholm* owed its hospital to the suggestion of Dr. Bäck and the surgeon Acrel. For several years collections were taken at weddings and christenings, at first only in the capital, but later throughout the whole country, till King Adolphus Frederick had a building bought, in which in 1752 a hospital with eight beds was opened. Two Knights of the Order of Seraphine directed it. The number of beds increased in the following thirty years to forty-four, each of which cost 1,744 thalers a year. In 1775 the contributions amounted to 67,500 thalers, including the proceeds of the royal lottery and of concerts and plays. For the conferring of the Order of Seraphine on the Empress of Russia she gave the hospital 70,000 thalers. It was a model institution in respect to cleanliness and administration; each patient had his own bed with curtains, and hospital clothing. When in 1780 the King of Sweden broke his arm, in the region of Loulais, the citizens for joy at his fortunate recovery, collected 4,000 thalers, to keep always in the hospital a few surgeons for special instruction in treating fractures of the arm and leg; these were called Loulais-physicians. *Copenhagen* followed the example of her sister city, and built in 1757 the Friedrich's Hospital for 280 patients, with the same number of beds. The annual cost of 25,000 thalers the government of Friedrich V. defrayed, among other ways, by reserving a monopoly of the printing and sale of playing cards. Winslow was surgeon, and he lectured once a week in the Danish language, on the cases as they came up, while Callisen, the professor of surgery, and first surgeon at the Marine Hospital, lectured in the German language. St. Petersburg possessed, in 1786, a hospital with 300 beds, a house of refuge and a hospital for syphilis, beside two smallpox hospitals, a school of obstetrics and an electrical institution of medicine. Likewise in *Moscow* the Empress had built hospitals, and Emperor Alexander gave the considerable revenues of two starosts to the hospital in Wilna. Russian noblemen followed the royal example. Count Scheremeteff set aside a capital of two and a half million rubles, the interest of which was to be turned over to the hospitals and charitable institutions. Von Demidoff gave the University of Moscow a million rubles for a library and natural

history collection, and for schools; he would also lend 1,500 serfs if the Emperor decided to found a university in Jaroslow. The following table may give an idea respecting the diet in the different hospitals:

Hospital.	Rigid Diet.	Full Portion.	Small Portion.
Charité in Berlin (1727).	. . . . .	Daily fresh meat, soup with entrées. Brown or white beer, occasionally wine.	
General Hospital in Vienna (1785).	In morning broth; at noon *trinkpanatel*; in the afternoon, when necessary, broth; in the evening, soup with pieces of bread.	In morning burnt flour soup with pieces of bread; at noon soup with barley, rice, grits or meal pudding, 1½ vierting of beef, vegetables; in the evening, soup, beer or wine (one maass for 8 kreuzer) according to orders of physician.	¼, ⅓, ½ portions. (This diet was especially for those who paid nothing, or only 10 kreuzer daily; in higher classes it was better.)
French Hospital regulation (1781).	Broth, three or four times daily.	Daily one pound of meat (⅔ beef, ⅓ veal or mutton), which must be weighed in presence of the Controleur, and which, boiled, must weigh ten ounces without bones; 24 ounces of bread, out of white flour, one pint of red or white wine or beer, salt and vinegar, extra food according to order.	
Charité in Paris (Hunczovsky 1788).	Clear soup, light milk or fruit foods.	Soup, 8 ounces of meat, 10 ounces of bread, noon and evening; ⅓ maass of wine.	½ and ¼ portions.
Hospital in Portsmouth (1780).	Warm milk with water or pomade soup, barley water as a drink.	One pound of boiled beef, ½ portion. one maass of beer.	

Although these regulations were not strenuously opposed in general, yet it must be remembered that in consequence of the gross irregularities and the farming out of certain hospitals, the contractors not only kept back fuel and linen, but even preyed upon the food for the patients, and supplied a poor quality in order to make as much money as possible. By comparing the two French tables of diet it appears that the patients were not furnished the full legal rations of bread and meat.

The following table shows the attendance and *mortality* at the various hospitals:

Hospital.	Year.	Total Number.	Deaths.	Percentage of mortality.	Surgical Patients.	Deaths.	Percentage of mortality.
Charité in Berlin	1796–1806	39,270 with	6,230	16	5,288 with	821	15.5
" "	1801	4,726 "	472	10	523 "	68	13
" "	1802	4,783 "	318	6	. . . .	. . . .	. . . .
" "	1803	5,004 "	457	9	798 "	81	10
" "	1804	. . . .	. . . .	7	. . . .	. . . .	. . . .
Gen'l Hosp., Vienna.	1784	8,824 "	864	9.7	. . . .	. . . .	. . . .
" "	1784–1787	30,764 "	2,642	8	. . . .	. . . .	. . . .
" "	1799	. . . .	. . . .	10	. . . .	. . . .	. . . .
Kiel	1797	348 "	46	13	. . . .	. . . .	. . . .
Bartholomew's Hospital, London	1771	. . . .	. . . .	8	. . . .	. . . .	. . . .
Bartholomew's Hospital, London	1787	3,836 "	. . . .	. . . .	. . . .	. . . .	. . . .
Thomas Hospital, London	1787	. . . .	. . . .	8	. . . .	. . . .	. . . .
Maternity House, London	1771	. . . .	. . . .	2	. . . .	. . . .	. . . .
Northampton	1787	. . . .	. . . .	5	. . . .	. . . .	. . . .
Manchester	1787	. . . .	. . . .	4.5	. . . .	. . . .	. . . .
Edinburgh	1787	. . . .	. . . .	4	. . . .	. . . .	. . . .
Hôtel Dieu, Paris	1771	22,000 "	. . . .	20	. . . .	. . . .	. . . .
" "	1783	30,000 "	6,000	20	. . . .	. . . .	. . . .
Charité, Paris	1783	2,500 "	. . . .	. . . .	. . . .	. . . .	. . . .
" "	1786	. . . .	. . . .	13	. . . .	. . . .	. . . .
St. Sulpice, Paris	1786	. . . .	. . . .	15	. . . .	. . . .	. . . .
Hospital in Lyons	1786	. . . .	. . . .	8	. . . .	. . . .	. . . .
Rome	1783	. . . .	. . . .	9	. . . .	. . . .	. . . .
Stockholm	1752–1775	8,261 "	967	11	. . . .	. . . .	. . . .
Copenhagen	1783	. . . .	. . . .	. .	593 "	51	8
"	1785	. . . .	. . . .	. .	639 "	39	6
"	1799	. . . .	. . . .	10	. . . .	. . . .	. . . .

(*To be continued.*)

PECULIARITIES OF THE SURGICAL DISEASES AND INJURIES OF THE NECK.

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(*Concluded from page 697.*)

PECULIARITIES OF THE SURGICAL DISEASES AND INJURIES OF THE SUPRA-CLAVICULAR REGION.

Congenital atrophic malformations.—A sort of atrophy of the region is presented in subjects, young and old, in which the supra-clavicular fossa is unusually deep, causing the deformity called "salt-cellar neck." Orifices of congenital branchial fistulæ are sometimes met with in this region.

Acquired atrophies call for no special remarks. As for *hypertrophic malformations* it sometimes happens that carriers, especially plank-carriers, develop a thickening of the skin and connective tissue of the region called a pad. In emphysema the hollow of the region is filled by the apex of the lung; also, in pneumatocele; also in aneurysms and other tumors.

Swellings of the region are rather frequent but present nothing peculiar, except what has been said.

Burns or frost-bites are rare, as the region is usually well protected.

Contusions sometimes present hematomata so large as to painfully compress the branches of the brachial plexus. In fractures of the clavicle the brachial plexus may be injured.

Punctured or superficial *wounds* may open the external jugular, the terminal part of the external and anterior jugulars and of the cephalic, but they are seldom serious unless infected. Punctured wounds of the subclavian vein and artery may also give rise to serious hematomata. When persistent they should be aspirated or incised. We should bear in mind that hematoma may be due to a wound of the vein, and that the connection may still exist. This will surely be the case if after aspiration it fills up again. In case of incision the deeper clots should not be disturbed, so as not to open the wound in the vein in case that lesion has occurred.

Injury to the subclavian artery is recognized by the pulsations of the hematoma; it is then a traumatic aneurysm. The artery should be ligated. When the swelling is moderate, the ligation should be made in the supraclavicular region, using, if necessary, an aneurysmal needle with a detachable point. In the majority of cases this simple ligation will suffice to cure the aneurysm; if not, compression of the axillary or its ligation should also be done; then the sac incised and the injured points ligated above and below. When on the right side, the artery can only be reached and encircled in its second portion after dividing the anterior scalene; no permanent ligature should be applied there; a provisional loop ligature should be placed, the sac incised, and the injured point of the third portion ligated permanently above and below. On the left side the ligation of the second portion can be made permanent at once, as it is as safe on this side as a permanent ligature is unsafe on the second portion of the right side. When the swelling is so great as to cause the failure of the above procedure, or so as to discourage even the attempt, but only then, a provisional ligature should be applied upon the first portion of the subclavian; the axillary should be compressed or treated in the same way, then the

sac is incised and the two ends ligated. In some cases these ends can not be found; packing with bits of aseptic sponges should then be resorted to, with compression over it. Should the hemorrhage return, the clavicle should be sawed through and the two ends secured. When the artery on the right side is wounded close to the scalene so as to compel ligation of the second portion, this should be done with double catgut, without rupturing the coats and with a bloodless space between the ligatures. On the left side the second portion can be ligated with safety after the old method; but the new method should be applied there also in preference. The permanent ligation of the first portion on either side should not be done unless it can be done thoroughly with double catgut, without rupturing the coats and with a bloodless space between. As this can not be safely done, as a rule, without resecting the inner extremity of the clavicle and the corresponding part of the sternum, this should only be done when the ligation of the second portion can not be performed satisfactorily as above described. Arterio-venous aneurysm, due to punctured wounds of both the vein and artery simultaneously, should not be interfered with unless they grow or cause serious pressure symptoms. Then both the artery and the veins should be ligated above and below and the sac extirpated unless too adherent to surrounding structures; if left in place it should be incised to diminish its pressure effects, sometimes these continue although abated.

Punctured wounds of the nerves rarely cause paralysis, but may cause persistent pain, neuralgia and trophic changes in the area of distribution.

Punctured wounds of the lymphatic duct on the right and of the thoracic duct on the left, may produce a chyloma, which should be treated as a venous hematoma; usually it is only then that it is recognized.

Punctured wounds of the apex of the lung may be followed by emphysema, at first limited and then generalized.

Incised superficial wounds, are not serious unless infected. The wounding of the external and interior jugulars and of the cephalic is easly arrested; however the wounding of these veins near their point of discharge into the subclavian may be followed by severe hemorrhage and by entrance of air into the veins.

Incised wounds of the third portion of the subclavian artery when large are followed by rapid death; when smaller they often cause traumatic aneurysms; the treatment is the same as indicated for punctured penetrating wounds. Incised wounds of the subclavian vein are most serious because of the amount of bleeding often causing rapid death, and also because of the quick penetration of air into the vein. The vein should be at once plugged with the finger, or better, an aseptic packing; then an attempt should be made to enlarge the wound and to clamp it and then ligate the two ends. When this is impossible, a provisional loop ligature should be applied on the first portion of the vein; also compression should be made on the axilla and the two ends ligated; the ligation of the proximal end is to secure against hemorrhage and also entrance of air, but the ligation also of the distal end is of course indispensable.

Incised wounds of the lymphatic duct on the right side and of the thoracic duct on the left are diagnosed by the oozing of the peculiar fluid they contain. If possible, the distal end should be ligated, and this usually stops the flow, since there is a valve on the proximal end. There is seldom if ever any, discharge from it. When ligation is impossible, compression will often suffice. It is very seldom that any further trouble is noticed, because there exists usually two or three branches of that duct, and the uninjured ones carry on the circulation. When this fails and a chyle fistula is established, then the patient loses flesh and succumbs.

Incised wounds of the brachial plexus are followed by paralysis of the affected area; they should be stitched at once. The lesions from whatever cause, may affect only one branch. Those neuroses never affect the internal, anterior, and posterior surfaces of the arm, because these are supplied by the anastomoses of the intercostal filaments with the internal brachial cutaneous. They must not be confounded with the anesthesia and paralysis resulting from contusions of the shoulder in hysteric subjects (hystero-traumatism). The treatment is by electricity. If a callus includes a nerve it must be resected.

Incised wounds of the phrenic nerve are most serious. However, when the nerve has been pressed upon by a tumor for some time, the wounding of it is not so dangerous. Incised wounds of the apex of the lungs are not so apt to be followed by emphysema as the punctured wounds.

Contused and lacerated wounds are much more serious than clean wounds because of the impossibility of primary union and because they expose more to secondary hemorrhage. Gunshot wounds also are serious for similar reasons.

Poisoned wounds, stings, bites, present no peculiarities here, nor do foreign bodies in wounds of this region.

Dislocations of the head of the clavicle are a frequent cause of serious contusion of the region.

Fractures of the clavicle sometimes cause wounds of the vein or of the artery or of the brachial plexus. Shock accompanying the injuries of this region is sometimes very great on account of the large nerves of the region.

Neuroses.—Sometimes the callus of a fracture of the clavicle includes a nervous branch, hence neuralgia or paralysis, requiring resection of the callus. A simple contusion without fracture, may produce a paralysis of the plexus. Repeated slight contusions may produce paralysis, as in the case of the strap of the carriers, especially water carriers. *Softening* and *induration* present no peculiarities. *Congestion* of this region present nothing special. *Acute inflammation* of the skin presents no pecularities. Superficial or supra-aponeurotic cellulitis and abscess present no special characters.

Deep or subaponueurotic cellulitis and abscess are not rare; they may develop in the region and burrow in the axilla. They may be the continuation of abscesses of the neck or axilla; these abscesses have a great tendency to burrow because of the resistence of the fascia of the region. In some cases the vessels raise the abscess and this may cause errors of diagnosis. Pneumonia of the apex may give rise to an abscess of the region. Superficial adenitis presents no peculiarities beyond being the most frequent starting point of primary cellulitis as a result of some affection of the upper extremity, side of chest and posterior region of neck and head. Deep adenitis also; these are more painful, being bound down by the fascia. Chronic inflammation of any of the tissues of the

region presents no peculiarities, except when propagated from the lung.

Gangrene from whatever cause may be serious if it penetrates to the vessels and nerves. A number of cases of gangrene are recorded as following the compression of the artery for aneurysms below; many of them terminated fatally from hemorrhage. Gangrene may be propagated from gangrene of the lung.

Ulcers are rare in the region and present no peculiarities.

Fistulæ are sometimes congenital, they are most commonly due to chronic tuberculous glands; rarely to bony lesions; more rarely still to tubercles of the apex of the lung.

Tumors of the supra-clavicular region—Gaseous tumors are represented by pneumatocele of the apex of the lung; also by emphysema in cases of wounds, and of general pulmonary emphysema. Liquid tumors—liquid hematoma is not rare on account of the frequency of the wounds of the region. Varix or dilatation of the subclavian vein is not rare in some forms of disease of the heart. Angioma presents nothing peculiar. Idiopathic aneurysms are comparatively frequent; the modern treatment is thorough asepsis, more especially here than anywhere else; resection of the inner extremity of the clavicle and corresponding part of the sternum; ligation of the first portion of the subclavian with double catgut ligatures without rupturing the coats and leaving a bloodless space between; also ligation of the vertebral in a like manner at the same sitting. Recurrent aneurysms should be treated by the ligation of the vertebral (if not already done) and of the axillary artery above the subscapular.

Inflamed aneurysms should be treated by placing a provisional loop ligature around the first portion of the subclavian, also a permanent ligation around the axillary above the origin of the subscapular; then incision of the sac, clamping and ligating the subclavian where it enters the sac and also of the other bleeding points; extirpation of the sac if not too adherent to important surrounding structures. Lymphangioma is not rare and presents no peculiarity. Serous cysts are frequent in children; they are very soft and feel reducible, but they are not. Mucoid, soft dermoid cysts present no peculiarities. Bursal cysts may develop under a "pad." Hydatid cysts are most rare. Purulent cysts or chronic abscesses usually come from other glands, most seldom from the lungs. Abscesses by congestion are not comparatively rare in this region, coming from the base of the skull, or from the neck, and on their way to the axilla following the sheaths of the vessels and nerves more particularly.

Solid tumors.—Cicatricial keloids are not so rare here, when the cicatrices draw the head to one side. Clotted hematoma may follow injuries of vessels as explained above. A fibrinous hematoma following a cured aneurysm was removed by Dr. Shopf. Sebaceous cysts and hard dermoid cysts present no peculiarities. Simple adenoma or lymphadenoma presents nothing peculiar. Adenoma of Hodgkin's disease is commonly met with here; also strumous adenoma, tuberculous adenoma, syphilitic adenoma; adenoma of glanders rarely. Lipoma may be superficial or deep. There exists here a pseudo-lipoma occurring in women over 40, due to arthritism and diabetes; it is diffused, projects between the sterno-mastoid and trapezius, and causes serious pressure symptoms; it may reach the mediastinum; it should be operated upon if pressure symptoms occur. Fibroma, myoma, myxoma, neuroma present no peculiarities. Chondroma is rare. Osteoma may arise from the first or second ribs, clavicle or vertebræ; seven cases of the last are recorded; they must not be confounded with an anomalous "cervical rib." Encephaloid, melanotic, colloid, pulsating, encephaloid, epithelioma, carcinoma, sarcoma, scirrhus, are very rarely primary; they are mostly consecutive and most often come from the glands of the axilla, themselves commonly affected by cancers of the mammary glands. A peculiar tumor in this region is a possible aberrant goitre, already described with the thyroid region.

PECULIARITIES OF THE SURGICAL DISEASES AND INJURIES OF THE POSTERIOR REGION OF THE NECK.

Congenital atrophy and hypertrophic malformations of the posterior region of the neck are rare. The most common is rare and is represented by a peculiar form of spina bifida. Congenital deviations are due to the congenital affections of the vertebræ and to torticollis.

Acquired or post-natal malformations, atrophic and hypertrophic deviations are due to neuroses (torticollis, paralysis), to injuries, to inflammations, gangrene, ulcers, fistulæ, tumors, operations, cicatrices.

Swellings of all kinds, due to the same causes, may be observed, but present nothing peculiar; the most common is the one produced by the chronic arthritis of the articulations between the occipital and the vertebræ, and between the first vertebræ themselves, and called the post-cervical or occipital arthritis or sub-occipital disease.

Burns and frost-bites are only particularly important here because of the cicatrices which may follow, causing disfigurement in an exposed part, and also possibly causing deviations of the head from retraction.

Contusions are more frequent than in front; they are particularly painful because the muscles contused are those which keep the head in balance; they are often accompanied by fracture of the spinous processes and laminæ, contusion and concussion of the spinal cord and even of the brain.

Punctured, non-penetrating wounds, *i. e.*, not penetrating the vertebral artery and the spinal cord, are simple wounds and seldom give rise to any trouble. However, should they be large punctured wounds and strike the deep cervical artery, or the posterior jugular vein, they may give rise to serious hematoma. When this persists, it should be aspirated or incised. When it pulsates it is a traumatic aneurysm of the said artery and it should be treated as such. Punctured wounds of the vertebral artery may give rise to an aneurysm also which must be treated as such, that is, by ligating above or below, or both, when possible, and then incised. Much hemorrhage must be expected from the untied end and the surgeon must plug tight with aseptic sponge and make firm pressure with a bandage.

Punctured wounds of the spinal canal through the interlaminar spaces, when the head is flexed forcibly, or through a fracture of the laminæ, are serious only if becoming infected. Incised wounds reaching the spinal cord itself are followed by paralysis of the parts below. If the wound is and remains uninfected, the cicatrization by primary union may take place and the paralysis disappear; if not, it will be perma-

nent. If between the occipital and the atlas or axis the oblong medulla is severed, death is instantaneous. Infanticide is often produced by a long needle or pin driven between the occiput and the vertebra. If the lesion is above the origin of the phrenic, death follows quickly by paralysis of the diaphragm. Incised wounds of muscles are usually due to saber cuts; they may include almost all the muscles; they may reach the vertebræ when the head drops forward; the hemorrhage is great. Incised wounds of the vertebral artery give rise to profuse hemorrhage. The peculiarities of the treatment of these wounds is prompt attention to the vertebral, the impossibility of ligating both ends if it has been wounded high up, the suturing of the large muscles, the difficulty of keeping the head steady and to secure drainage; a liquid glass bandage or a jury-mast apparatus will assist materially.

Wounds of the posterior region are said to be followed by sexual impotency when the membranes of the cord are involved; also by paresis and wasting of the lower extremities; also of the testicle. Larrey contends that this may take place even when the cord is not affected. Contused or lacerated wounds present nothing particular.

Gunshot wounds are usually serious if they reach the membranes on the cord. When pressure symptoms are present, very extensive and deliberate dissections must be done to remove the ball, the fragments of broken lamellæ, or clots, or foreign bodies, which cause the pressure. Poisoned wounds, stings, bites present no peculiarities. Foreign bodies causing pressure symptoms on the cord must be removed at almost any cost.

Ruptures of the muscles of the nucha are reported in those who carry heavy loads on the head; the symptoms are those of other muscular ruptures.

Ruptures of the attachments of the rhomboid and of the elevator of the angle of the scapula have been seen in farm laborers. Sprains, dislocations, fractures of bone belong to another chapter. Shock accompanying the injuries of the posterior region is usually great, being often complicated with concussion and contusion of the cord or of the cerebellum or of the whole brain.

Neuroses are represented by the acute torticollis (posterior) of the trapezius. It is said to be be even more frequent than the torticollis of the sterno-mastoid. When in the trapezius and complexus the head is inclined on the affected side, but the face is turned toward the opposite side; the head is slightly thrown backward. There is no cord, no diffuse induration, no atrophy of the face; the pain is near the atlas and is increased by pressure; under anesthesia the head can be straightened. This torticollis may be confounded with occipital arthritis with inclination of the head. The treatment consists in applying a liquid glass bandage or plaster apparatus; it should be worn one year. When both the trapezius muscles are affected the head is thrown back. In cases of torticollis of the trapezius the sterno-mastoid is often also contracted, but it is a contraction of immobilization; the pain is along the trapezius and not along the sterno-mastoid. Very often the torticollis affects also simultaneously the deeper muscles, the splenius, the elevator muscles of the scapula, the rhomboid. The scalenes and the platysma are sometimes the site of torticollis. Chronic or permanent trapezius torticollis is rare.

Softening or *induration* present nothing of special interest.

Congestion of the posterior region presents nothing special.

Acute *inflammation* of the skin is represented specially by large boils and carbuncles; they are comparatively very painful; they give great pain because the tissues are inextensible; sometimes they are followed by extensive sloughing, when the general health is low, specially if diabetes be present; they are also serious because the veins of the upper part of the region open into the sinuses of the dura mater. The circumscribed anthrax is not as grave and is usually amenable to ordinary treatment. Diffused anthrax extends continuously from the superior curve line of the occipital to the seventh cervical and from one ear to the other; nothing stops it, not even the largest or deepest incisions, until it has reached the above limits. It is as though a certain extent of tissue was infiltrated with microbes or as when an artery is obliterated and gangrene continues until all the area of the artery is mortified (Tillaux). Extensive incisions are even hurtful until limitation has been established, on account of the shock of the operation. When limitation has taken place, then incisions or the curette assist in removing the mortified tissues. Acute cellulitis, extensive gangrene or post-cervical abscess, phlegmons, are sometimes observed here when the general health is low, specially if diabetes be present, and for the other reasons explained above. They are really adeno-cellulitis or phlegmons because all inflammation here begins in the glands; they are usually due to disease of the scalp and skin; they may be superficial or deep; deep abscesses usually cause great pain on account of the thickness of the skin, they give rise to but very little redness and edema; they have a tendency to flatten and spread because of the thickness of the skin; they are slow in becoming superficial for the same reason; the knife must penetrate deeply to reach them. Acute lymphadenitis, however, is itself rare; it is due to lesions of the scalp and skin. Chronic inflammations are represented specially by acne, by syphilitic eruptions and by the well-known syphilitic adenitis of the suboccipital and mastoid regions; these lesions are so constant in syphilis that Ricord used to say that was the place to feel the pulse of syphilis.

Gangrene of the region is serious when extensive or deep, on account of the cicatrices and their consequences. *Ulcers* are rare and present no peculiarities. The same is true of *fistulæ*.

Tumors of the posterior region of the neck.—Gaseous tumors are represented only by the extension of an emphysema.

Liquid tumors.—Liquid hematoma presents no peculiarity. Varix and angioma are very rare. Aneurysms of the vertebral artery are not rare in this region; they are usually traumatic and are often high up. The artery should be ligated above and below, if possible; or above or below whenever possible, and the sac incised and immediately plugged with aseptic sponges; if possible, the distal bleeding end should be ligated. In case a secondary hemorrhage should occur through the distal end and be uncontrollable by plugging, the ligation of the vertebral on the other side must be considered and weighed.

Lymphangiomata are rare here. Serous cysts and congenital cysts are sometimes median and sometimes lateral; they may reach as low down as the dorsal region and from the rachis to the acromion; they are

usually met with in children born prematurely and presenting other malformations; they are sometimes transformed into lipoma; according to Lannelongue they are congenital cystic lymphangioma. Mucoid cysts and dermoids are rare and present no peculiarities. Bursal cysts or hygromata are sometimes met with over the spinous processes of the seventh cervical. Purulent cysts or chronic abscesses, idiopathic or symptomatic, or by congestion, are rare here.

Solid tumors.—Comedones are not rare, neither is keloid. Clotted and solidified hematomas present no peculiarities. Sebaceous and dermoid cysts are usually difficult to dissect because they are so intimately adherent to the surrounding tissues. Simple adenoma or lymphadenoma, adenoma of Hodgkin's disease, strumous and tuberculous adenoma are comparatively rare. Adenomata syphilitica, *i. e.*, the chronic enlargements spoken of above, are very common and almost pathognomonic of syphilis. A case of gumma of the trapezius has been recorded. Adenoma due to glanders is most rare.

Lipoma is common. The circumscribed form is the most frequent; this region is a site of predilection; it sometimes sends fibrous processes to the vertebræ. A peculiar circumscribed form of lipoma is described in prostitutes over the point of junction of the neck and back of the curve seen there, and due, it is said, to the position they so often have to assume. Diffuse lipoma is sometimes limited to the region and sometimes a part of the diffuse kind of lipoma which occupies the whole circumference of the neck like a cravat; it is such in some cases that it is impossible to fix the limit of its margin, *i. e.*, to say where it ends and where the natural fat begins. Fibroma of the region sometimes also presents adhesions to the vertebræ. Cervico-dorsal fibromata are common (Guyon); myxema, myoma, neuroma, chondroma, osteoma are rare. The same is true of encephaloid, melanotic, colloid pulsating sarcoma, epithelioma, carcinoma, scirrhus and they present no peculiarities.

The surgical operations of the posterior region of the neck present no peculiarities.

SOCIETY PROCEEDINGS.

Chicago Academy of Medicine.

Regular Meeting held March 12, 1897, at the Leland Hotel.

Dr. W. X. SUDDUTH in the Chair.

AUTO-INTOXICATION IN ITS MEDICAL AND SURGICAL ASPECTS.

(*Concluded from page 701.*)

Dr. WM. L. BALLENGER—I shall briefly refer to a few conditions which result from pathologic processes in the nose and throat, and to some which manifest themselves in the nose and throat, but which have their origin elsewhere.

AUTO-INTOXICATION RESULTING FROM DISEASE OF THE NOSE AND THROAT.

Guye, of Amsterdam, first called attention to a mental disturbance occurring as a result of lymphatic obstruction in the nasal mucous membrane. In the cases he reported there was hypertrophy of the turbinated bodies which pressed against the septum, thereby occluding the lymphatic circulation. A symptom common to all his cases was inability or difficulty in fixing attention. He called the condition "aprosexia," which means difficult attention. Axel Key and Retzius have shown that the lymphatics beneath the dura mater and those of the nasal mucous membrane communicate.

Guye based his conclusions upon his clinical observation of *a*, stenosis and mental disturbances; *b*, the rapid relief following the reduction of the hypertrophy; *c*, the experimental work of Key and Retzius demonstrating the communication between the lymphatics of the nose and dura mater. He described three types of aprosexia: 1, physiologic aprosexia resulting from brain strain and overwork; 2, neurasthenic aprosexia in which nervous debility plays a part; 3, nasal aprosexia, where the chief pathologic condition is hypertrophy of the inferior turbinated body, or post-nasal adenoids. In the type denominated nasal aprosexia he claims lympho stasis with resulting absorption of the static lymph by the brain tissue; that reduction of the hypertrophies, adenoids, etc., overcame the lympho-stasis and the resulting intoxication of the brain cells.

Scanes Spencer (1890) has shown us that chronic rhinitis, hypertrophic rhinitis, post-nasal adenoids, etc., in children are attended by one or more of the following symptoms: Derangement of sleep, temper, spirits, energy and intellectual power. He also found that relief from the above pathologic conditions greatly improved all the foregoing conditions. Whether the explanation is lympho-stasis, or veno-stasis, or over-production of carbon dioxid, the general proposition of auto intoxication resulting from stenosis of the nasal air channels can scarcely be denied.

Ziem has produced scoliosis of the vertebral column in high degree in rabbits by obstruction of one-half of the nose. He observed one patient who became scoliotic after a traumatic stenosis of the nose. I mention his experiments as suggestive at least.

The thyroid gland is thought to excrete a fluid which is taken up by the lymphatics and finally emptied into the general circulation and distributed to all parts of the body. This substance, although its chemical nature is unknown, seems to perform a very important function, for when the thyroid gland is removed a grave systemic condition results, which is known as myxodema. This excretion may act as an antitoxin to other poisons in the circulation, or it may act as a stimulus to the activity of certain cellular functions. My deduction is that auto intoxication may result from extensive destruction of the gland by disease or traumatism.

Stenosis of the nasal respiratory tract results in an over-production of carbon dioxid. To explain: The function of the respiratory tract of the nose is to warm, moisten and filter the air; if it fails on account of stenosis to sufficiently warm, moisten and filter the inspired air, an irritation is excited in the air cells of the lungs. When these cells are thus irritated they do not abstract enough oxygen from the air to completely oxygenate the tissues and carbon dioxid is a result. Carbon dioxid is a violent poison to the leucocytes, hence their germicidal power is impaired and the system is open to the invasion of the various morbific germs. Then stenosis of the respiratory tract of the nose causes auto-intoxication by the over-production of carbon dioxid.

In 1893 Professor C., aged 36, a scientist, consulted me for relief of a headache which had been with him constantly for two years. He said: "I do not care so much for the headaches as I do for the inability to fix my attention as I used to do." Upon examination I found great hypertrophy of the inferior turbinates. I removed the major part of the one on the left side, and although nearly four years have elapsed since that time he has been free from headaches and is relieved of the aprosexia.

Feb. 27, 1897, Mr. John N., aged 42, janitor, consulted me at the Policlinic, stating that he had "catarrh of the nose." I obtained the following history: Has had nasal catarrh for years, but about two years ago it became much worse. Complained of pain across bridge of nose. Said he could not remember little duties as he did formerly. Had dull headaches in frontal and parietal regions. This has continued up to the present time. Examination showed that he had ethmoiditis. The middle turbinated bodies were much swollen, pressing against the septum. In this case there was in all probability a lympho stasis, and a morbid secretion which was reabsorbed in part, thereby poisoning the brain cells, the clinical expression of this auto-intoxication being the headache and mental hebetude.

To one who is clinically familiar with hypertrophic rhinitis, post-nasal adenoids, etc., the relief following operative procedures is a familiar picture. That the relief is due in part to improved oxygenation of the blood I can heartily endorse. The retained, decomposed secretions are undoubtedly reabsorbed in a measure and act as toxic agents. I have seen children who were pale, emaciated, stupid and peevish, who after an operation for post-nasal adenoids rapidly regained robust health and mental vigor. That this happy result is in part due to relief from absorption of static lymph and decomposed or modified secretions I think is a reasonable proposition. I believe it is also due in part to the lessened production of carbon dioxid, and the consequent increased activity of the leucocytes.

AUTO-INTOXICATIONS OF THE NOSE AND THROAT WHICH HAVE THEIR ORIGIN ELSEWHERE.

Rheumatism is recognized as an auto-intoxication, unless we except the acute inflammatory type which is caused by germs entering the system, starting chemic laboratories and emptying the products of their skill into the rivulets, streams and rivers of blood as they flow past the laboratory doors.

In one of my clinics this winter I saw a case of lacunar inflammation of the pharyngeal tonsil during an attack of rheumatism. The patient said she had had several attacks of rheumatism of a mild nature, and each time it was attended by an "ulcerated sore throat." Anti rheumatic treatment promptly relieved her of the lacunar tonsillitis.

There is a condition in which the inferior turbinated bodies are red and turgescent, but which will not collapse under local applications of cocain, but which will yield very kindly to colchicum.

Gouty intoxications or irritations have been observed in the nose, pharynx and larynx, especially by English specialists.

Morell Mackenzie records two cases of gouty deposit around the crico arytenoid joints causing permanent dysphonia, and another producing fungous ulceration of the ventricular bands.

Conclusions.—There are other conditions which might be mentioned if time permitted, but I am content if I have succeeded in suggesting the strong probability that nasal or naso-pharyngeal stenosis is attended by serious poisoning (or intoxication) to the general system, and that poisons or toxic agents which pervade the general system are sometimes the cause of local pathologic conditions in the nose, throat and larynx.

EPILEPSY AND NEURASTHENIA IN THEIR RELATIONS TO AUTO-INTOXICATION.

Dr. H. C. B. ALEXANDER—It has now been proved that under normal circumstances the toxins and ptomains which are produced in the organism are eliminated by various channels. These poisons are necessarily produced in the splitting up of proteids; but under conditions of strain the normal elimination is interfered with. The great organ concerned in the destruction of poisons is the liver. This is true alike of the poisons generated in the system, as well as of those introduced. The bowel very often, through a conservative diarrhea, carries off the excess which if absorbed would poison the organism as a whole.

The lungs oxidize these poisons and change their character, while the kidneys may eliminate nearly all the products except the gases. Under conditions of strain of a mental or nervous type every one of these organs has its functions interfered with, and a vicious circle results. The atonic condition of the nervous system produced by strain checks the normal elimination, and is in its turn *increased* by the influence of the retained toxins; furthermore, the organs themselves fail to do even their ordinary duty because of the strain put upon them in the attempt to supplement each other.

Thus, the same toxins, which are either broken up in the liver or pass off through the bowel, are in cases of neurasthenia found in the urine, the quantity of which is reduced, at the same time, below normal. In this way not only are the nervous symptoms of neurasthenia—the helmet sensation, etc., produced by a blood surcharged with toxins, but metabolism is interfered with and temporary states of lithemia, oxaluria and glycosuria result, which increase the nervous exhaustion and increase also the overwork of the digestive and eliminative organs, producing by the accumulations of gas enteroptosis, etc., which Glenard claimed as a cause of neurasthenia, but which is one of the results of the disease, long ago recognized (by alienists) as occurring in melancholia.

As the effects of these toxins are generalized or localized in the nervous system, so will prominent features of the clinical picture vary from stupor to general depression and from vertigo to epileptiform attacks. Indeed, it is by no means improbable that a recurrent epileptiform condition may be set up which closely simulates true epilepsy and, it is by no means improbable, ultimately passes, in some cases, into that condition. In some cases of neurasthenia the action of the toxins seems to be largely localized in the spinal cord, and in these cases demarcation from locomotor ataxia is by no means easy, but the rapid disappearance of the spinal symptoms under treatment leaves no doubt as to their source. The relationship of neurasthenia to epilepsy, just described, leads to a clearer idea of the exciting factor of both the epileptic attack and the epileptic status.

Meynert pointed out that the epileptic status was best explained by the presence of, as he called it, a cyanid-like, or as it would be called today, a proteid body in the cerebral circulation. The researches of Féré on the urine of epileptics have since demonstrated the correctness of Meynert's proposition. The long continued action of toxins can safely be accepted as producing secondary sclerosis, and in long continued cases of epilepsy these secondary scleroses have sometimes been found. These influences of auto-intoxication in producing the various symptoms of neurasthenia and epilepsy give an excellent indication for treatment which is too often neglected. The dietetic and hygienic treatment is eminently calculated to remove many of the links of the vicious circle which tends to keep up both these conditions. Furthermore, the proper regulation of elimination by all the organs, so as to prevent undue strain on any one, is preëminently indicated. Herein is found at once the explanation and the indication of balneotherapy. The last of the eliminative factors explains the the evil effects of nervins like the bromids.

THE RELATION OF AUTO-INTOXICATION TO THE PSYCHO-NEUROSES

Dr. DANIEL R. BROWER—I shall present a few conclusions which I think may be safely asserted with reference to this subject:

1. That some of the psychoses, especially those that occur in the fully developed normal brain—mania, melancholia, stuporous insanity—are the products sometimes of auto-infection.

2. That this auto-toxis in its effects on the nervous system, acute or chronic, may result in destruction of the structure and functions of the nerve cells.

3. The peculiar arrangement of the lymph channels in the nervous system makes auto intoxication possible by the blocking up of these canals.

4. The principal factors in auto-toxis are a disordered gastro-intestinal tract and renal insufficiency.

5. Dilatation of the stomach and colonic impaction are conditions producing gastro-intestinal intoxication in some cases.

6. The diagnosis is to be made, 1, by regional examination; 2, by examination of the gastric juice and contents; and 3, by examination of the urine.

7. The urine will show an increased amount of indican, diminished total sulphates, and an increase in the amount of ætherial sulphates.

8. There will also be found, in consequence of this auto-toxis, a diminished hemoglobin record and red blood corpuscles.

9. The treatment should consist of lavage, enteroclysis, gastric and intestinal antisepsis and hematinics.

THE NEUROSES IN RELATION TO AUTO-INTOXICATION.

Dr. SANGER BROWN—I am content to adopt the very concise and clear definition of auto-intoxication laid down by Dr. Evans, and yet there is a lingering skepticism in my mind as to whether it would really bear investigation. It might bear investigation in the present state of our knowledge; at the same time, there are a great many so-called auto-intoxications which we can not demonstrate, and yet may be part of something that is introduced into the system from without. As it stands now, it simply shuts out what we regard as the products of bacteria, something that the bacteria develops of itself. I do not think it is conclusively proved that bacteria necessarily do anything more than derange the metabolic processes, and that, after all, the poison of the bacteria is the result of metabolic changes. Here is a fine point that it would be hard to settle definitely. But at present, I believe it has been accepted by those who have taken part in this discussion, that gout, uremia, diabetes, myxedema, acromegaly and perhaps exophthalmus, are auto-intoxications. Limiting ourselves to those, so much importance pertains to them as nervous diseases that they are included and discussed in nearly all works on nervous diseases at more or less length, and it is mainly the functional aspects of these subjects that are dwelt upon. Now, to take up each subject *seriatim* and discuss it would consume more time than present circumstances will permit.

In a general way, it may be said that in all these diseases, the reduction they cause in the general health of the individual, and the extent to which they depress all the functions of the body, the nervous system included, tend to the development of functional disease of the nervous system, more especially if any predisposition to such disease exists. We will get in most of these conditions in people who are predisposed to hysteria, hysteric manifestations, and sometimes we will get neurasthenia. This may be said of any disease which tends to lower the vitality very much, whether it be an auto-intoxication or not. The main point for consideration in this connection is, however, the functional disorders which are peculiar to the auto-intoxications. Time will only permit the mention, not the discussion, of a few of these. In diabetes a coma often develops very rapidly, sometimes preceded by distressing dyspnea or delirium, and frequently fatal within forty-eight hours. Then, too, severe and obstinate neuralgia is not infrequent. Convulsions and coma are more frequent in uremia than in diabetes, but are less immediately fatal. Each may have to be

diagnosticated from the other, and from coma due to other causes.

I will only mention the rapid pulse, flushing and local sweating of Graves' disease, and the slow pulse, dry skin and mucoid discharge from the mouth in myxedema. The active mental state of the former disease might be contrasted with the apathy of the latter.

THE ANESTHETIC AND SURGICAL RELATIONS OF AUTO-INTOXICATION.

Dr. ALEXANDER HUGH FERGUSON—Without saying anything about anesthesia at present, I shall touch upon it incidentally in connection with the surgical relations of auto-intoxication. From the remarks that have been made, one would suppose that surgery and auto-intoxication have no relationship one to the other. I wish to point out, however, that the surgeon is as much interested in auto-intoxication as any of the other specialists. Auto-intoxication was forced upon the surgeon long before physiologic, pathologic, and bacteriologic chemistry were known. From time immemorial it was learned that certain cases operated upon did not do well after the operations and many of the phenomena shown by them have since been cleared up by the researches of pathologists in laboratories.

Auto-intoxication and its relation to general surgery is allied with the preparation of the patient for operation. It was noticed that patients who were operated upon without preparation, without thorough purgation, without the body being properly cleansed by baths and attention paid to the condition of the kidneys, did not do well afterward; that there was a tendency to sapremia, to septicemia, and pyemia; that there was a greater tendency to suppuration, and that all the waste substances in the body were not properly eliminated. It was also found that even antisepsis and asepsis did not completely fulfil the desired wish of surgeons in securing excellent results; therefore we must look to the preparation of the patient before operation and also to the after-treatment. The relationship of surgery to the excrementitious substance by the kidneys, the urine, has been known for a long time. Cases that were operated upon were immediately followed by anuria. When a patient is properly prepared there is less tendency to it. If there should be kidney complications we should call in a physician to treat and fortify the patient before operation.

Venesection and intravenous transfusion are closely related with anuria, and very frequently the surgeon deems it wise to perform venesection. It is pretty well established that second to the excretion of poisons by the kidneys themselves, it is more rapidly done by venesection than by purgation or sweating; but we can not repeat venesection many times. It is only of temporary use, and intra-venous transfusion should be done at the same time. Here I wish to report the case of a man upon whom I performed the operation of amputation above the knee joint and complete suppression of urine followed. His pulse was full and bounding. I performed phlebotomy twice with saline transfusion, and even had to do it a third time when the kidneys began to properly perform their functions and the patient got well. Of course, he might have gotten well without this, but I fancy he would not. Suppression of urine and its poisonous effects of the system is also allied to surgical procedures.

The presence of indican in the urine is brought before the surgeon in a very forcible manner, and although we are told tonight that indican is caused by bacteria, which is new to me still the surgeon even from the standpoint of auto-intoxication has to make use of it in a negative way by excluding such a thing as obstruction of the bowels. If we have complete obstruction due to strangulation, then we have indican in the urine, while in coprostasis we are likely to have none. A good deal more might be said regarding the surgical relations to the excretion of urine, but we will pass on and briefly consider bile.

The surgery of the gall bladder and bile ducts is to be considered in connection with auto-intoxication from bile. When the common duct becomes obstructed with gallstones the bile is absorbed, threatens the life of the patient from cholemia, and the surgeon has to give relief by performing an operation. The bile is poisonous; it produces a true toxemia, and were it not for the modifying influence of the liver upon it again, death would shortly ensue. It is mentioned, I think, by Roswell Park that the liver secretes sufficient poison in eight hours to kill the individual. The excrementitious substances in the bile, particularly the toxic portions of it, have been made the subject of a good deal of investigation. We know that chloroform is taken very badly by patients who are poisoned with bile or with urine. We know, too, that hemorrhage is much more liable to take place from operations performed upon patients who are cholemic.

When we come to the alimentary canal, there the definition that has been laid down by Dr. Evans is very clear, but too restricting. Entero-intoxication and entero-sepsis are so closely associated that I think it would be difficult to draw a sharp, practical line of demarkation. For instance, in a case of ileus, how are we to tell whether it is an auto-intoxication that causes death? We operate on a case of strangulated hernia the blood returns to the parts, but the patient dies not from inflammation as the postmortem shows and the surgeons call it auto-intoxication. How are we to tell whether that poisoning is caused by the germs which happen to be present in the alimentary canal, or whether it is caused by the absorption of partially digested food and the reabsorption of the secretions and excretions pouring into the alimentary canal. This is a snag which I think we are compelled to take cognizance of. There is another form of auto-intoxication which I should like to mention briefly, and that is the form which follows aseptic operations, which we now designate for want of a better term, surgical fever. Notwithstanding that the work was well done, we find a certain amount of fever following operative interference. This fever comes on soon after the operation; it reaches its acme in a short time and passes away about the third day. At present we attribute it to absorption of the secretions which have taken place into the wound cavity from the blood and tissues. This form of intoxication is brought before the surgeon more or less frequently, and it was in fear of this surgical fever predisposing to sapremia and to septicemia that drainage was so freely resorted to by surgeons in the early days. Since the antiseptic era began surgeons went to the other extreme and used no drainage at all, but we have more surgical fever unless we employ some method of drainage, and now we resort to capillary drainage in large wounds. This form of constitutional disturbance may be caused by the absorption of the fibrin-forming elements. That is what I have been teaching; I do not know whether I am correct or not.

Chloroform disturbs the digestion, interferes with the secretions of bile and urine, causing auto-intoxication. It disturbs the alimentary canal and causes auto-intoxication, which a free purge clears away. The system is already engorged with effete matter and there is an extra tax on its eliminating powers. Auto-intoxication in this connection predisposes to suppuration, sapremia, septicemia, etc.

In regard to urethral fever we know that soon after passing a catheter or after doing an operation upon the urethra, there is no fever, until the urine passes over the raw surface. It may be in a few hours the temperature runs up to 103 or 104. If the catheter be retained in the bladder, we have no urethral fever until the catheter is removed and the urine comes in contact with the raw surface. The question before us is whether this fever is due to the absorption of poisonous materials in the normal urine, or the germs of ptomains which may be present in it.

Another subject that has been attracting the attention of surgeons of late years, is the thyroid gland. Whether the thyroid gland secretes that colloid material which is always inside of it for the purpose of body metabolism or excretion, the two theories being put before us, I am not prepared to say. The close relationship between exophthalmic goitre and the condition of the thyroid gland, probably causing an auto-intoxication, is not clear. Surgeons have been so bold as to cut down and remove a portion of the thyroid gland for exophthalmic goitre with good results. Some surgeons claim to have had 50 per cent. of successes. So that the subject of auto-intoxication is forced upon the surgeon at every turn. Even in the surgery of the prostate gland, I do not know but that auto-intoxication may have something to do with it.

There is perhaps no doubt that rickets is caused in a measure by malnutrition. The various deformities in children caused by rickets such as coxa vera, genu valgum, and so on, may be directly or indirectly influenced by some form of auto-intoxication.

PEDIATRIC RELATIONS OF AUTO-INTOXICATION.

Dr. ROSA ENGELMANN—It is difficult to discuss this subject within the limitations assigned by Dr. Evans, since he excludes a bacterial genesis of the auto-intoxications. My conception of the gastro-intestinal diseases of children has been that of an auto-intoxication, namely, a poisoning within the body, from food decomposition to begin with and a later and consequent cellular perversion. I can not see how the question of intestinal intoxication can be at all discussed without including the decomposition of foods and the relation of the body through the intestinal canal to the outside world. I can not see why the pathologic cellular metabolism in this location is not as much of an auto-intoxication as the poisoning from a syphilitic tumor of the brain, for syphilis comes from without.

A cell perversion and toxemia obtains in the first as well as in the second instance, except that the one has a closer, but more superficial connection to external causes. The results of pustulation in smallpox was mentioned as an auto-intoxication. Is it not true that the pyogenic germs in the skin simply penetrate a region of minor resistance, namely, come from without as truly as do the many intestinal bacteria, perfectly innocuous until some perversion or disease of the intestinal mucous membrane causes them to assume a pathogenic role?

Another speaker named the auto-intoxication of rickets as productive of the bone lesions. We know nothing of the etiology of this disease and can as well speak of the lesions of any and all diseases as auto-intoxications, for whatever produces diseased cell action will produce diseased cellular products for absorption. I am, therefore, with those members of the society who believe that the line has been too closely drawn.

AUTO-INTOXICATION IN RELATION TO THE JAWS AND TEETH.

Dr. EUGENE S. TALBOT—From what has been said to night we might say that the entire practice of dentistry is based upon the results of auto-intoxication, including the initial cause of decay of the teeth and all diseases resulting therefrom. School-strain, over-work, mental anxiety, mental and spinal diseases, such as paretic dementia, locomotor ataxia, injuries to the spine and improper mastication of food, producing trophic neurosis and also affect the peripheral nerves to such an extent that decay attacks the teeth with more vigor and disastrous results. Abrasion and erosion of the teeth are also due to these causes. After the pulp becomes exposed, toothache with neuralgia, extending over the face, the head, neck and sometimes arms takes place. When death of the pulp occurs, alveolar abscesses form and pus may accumulate in remote parts, frequently producing blood poisoning, as observed in similar conditions in other parts of the body. Deposits of tartar, scurvy, mercurial and lead poisoning, produce pyorrhea, with destruction of the peridental membrane and alveolar process, thus causing the teeth to loosen and drop out.

Diseased teeth and gums produce indigestion and fermentation in the stomach and small intestine, due to a want of proper mastication and proper hygienic condition of the oral cavity. Thus we have malnutrition and trophic neuroses affecting all parts of the body.

The teeth and jaws, unlike other structures of the body, register their defect, due to auto-intoxication in the mother and after birth in the child. They remain living examples throughout life of malnutrition and the date of such poisoning.

Deficiencies in nerve centers produce excessive and arrested development of the jaws and teeth. Inherited diseases produce malformed teeth, hastening decay. Thus defects in tooth structure produce malnutrition and vice versa.

TREATMENT OF OBSTETRIC RELATIONS OF AUTO-INTOXICATION.

Dr. WM. H. RUMPF—The various forms of post-partum infections, as also the intoxications arising from death of the fetus, might well be classed under auto-intoxications, but I shall confine my remarks only to the condition known as eclampsia.

At the International Gynecological Congress, held at Geneva in September of last year, the question of treatment was thoroughly discussed by various authorities, and it may be of interest to note a few of the conclusions arrived at. We must formulate our methods of treatment in accordance with the practical experience of those who have large clinical material to work with. Charpentier of Paris, sums up his experience in the following sentences:

1. As on the one hand every pregnant woman whose urine contains albumin is in danger of eclampsia, and on the other hand, an exclusive milk diet in Bright's disease and the common nephritis of pregnancy has given excellent results, it is necessary to examine the urine with the greatest care and on the least suspicion of albumin insist on an exclusive milk diet.

2. In all cases of eclampsia venesection is indicated when the patient has a robust constitution and is cyanosed. After that chloral hydrate with milk per os, or if necessary stomach tube, gives the best results.

3. The eclamptic attacks themselves are best subdued by chloroform; at the same time diuresis should be increased by subcutaneous injections of normal salt solution.

4. If the patient is weak, the cyanosis less pronounced, and the attacks infrequent, the chloral treatment alone should be tried. Whenever it is possible, the confinement should be allowed to continue without artificial help. Premature labor should be induced in the most extreme cases only.

Halbertsma, of Utrecht, arrives at the following:

He recommends an active procedure in the following cases: *a*, When the prognosis is very grave in consequence of very frequent and very pronounced attacks or complete anuria. *b*, When good reason exists to believe that labor pains will not begin, or that the pains will last a very long time as in old primipara, twins or narrow pelvis. *c*, At the end of pregnancy, under the above conditions, Cæsarean section should be performed. He also advocates deep cervix incisions to increase the labor pains when there is a possibility of a spontaneous birth.

Veit, of Leyden, concludes:

1. It is impossible at the present state of our knowledge of the etiology of the disease to recommend any definite treatment of eclampsia. A large number of cases certainly get well with any kind of therapy.

2. The proof that a forcible termination of labor with rubber dilators, cervix incisions, Cæsarean section, etc., visibly improves the prognosis, has not yet been brought.

3. The reported results of venesection are not sufficiently numerous to be able to judge of its merits.

4. The results obtained by systematic treatment with large doses of morphia seem to be the most satisfactory.

5. As long as the pathology of eclampsia is undecided we can not decide upon any rational therapy. It is very probable that there are various etiologic factors that produce it.

6. Hastening delivery without endangering mother and child, as rupturing the bag of water, forceps after complete dilatation, giving large doses of morphia to lessen the attack, avoiding all food by mouth in patients who are unconscious, and exciting diaphoresis by external means, promise the best results.

7. There is no reason for regarding eclampsia as a cause for some immediate active procedure and to recommend dangerous operations which are not in the scope of the general run of physicians.

In conclusion, I should again lay particular stress on the prophylaxis. Examine the urine frequently from the first months of pregnancy, and at the least indication of albumin or of edema, order an exclusive milk diet, diuretics and mild salines. When the symptoms of eclampsia have arisen, I should incline rather to procrastination and conservatism than to radical operative procedures. We must not be misled by a few brilliant results from one particular form of treatment. Many cases get well with no medication, you might almost sometimes say in spite of all medication, and it is difficult to say whether venesection, veratrum, chloral, or whatever agent may have been employed, is the real cause of the cure. When our methods of chemic examination of the blood and urine will have been more perfected, and when we have a clearer understanding of all the etiologic factors at play, we shall be able to find a more rational therapy.

SELECTIONS.

Diagnosis of Malarial Fevers.—Dr. William Osler, in the *Medical News* for March 6, treats of the diagnosis of malarial fevers. He prepares his way by declaring his belief as to the undeniable facts that have great clinical interest. Whether his fourth postulate is as firmly founded as the others will be a question to stir up those who deal in the statistics in our boards of health. The four postulates are: "1. It was the disease best known to the old Greek and Roman physicians, some of whom gave very clear clinical pictures of the chief varieties. 2. It remains, after 200 years, the only acute infectious disease for which we have a positive specific. 3. It is the most important known disease due to protozoön parasites. 4. North of Mason and Dixon's line physicians are prone to diagnose malaria for other diseases; south of the line they are more prone to diagnose other diseases for malaria; in both regions it is a source of greater errors in vital statistics than any other affection."

Dr. Osler considers the rarity of a double infection by the hematozoa and bacillus of Eberth. He has had 1,500 cases of malarial and typhoid fevers, passing through his wards, nearly every one of which has had a careful blood examination; and only one case of dual infection was detected. It is an important subject and it is well worth while that in doubtful cases coverslips be preserved for examination by an expert.

"Certain symptoms, particularly chills and sweats, are prone to deceive the physician who has not learned to recognize them as not infrequent events in typhoid fever, associated with complications or with septic infection. I need scarcely here refer

to other forms of irregular malarial fever—the more pernicious types. They are not very common with us, though in the autumn we have to be on guard constantly to avoid mistakes, and we have, as a rule, one or two fatal cases a year."

In his last paragraph he treats of what he curiously styles the "spurious malaria of the health boards," meaning the supposed inexact diagnosis of physicians whose certificates of death are uncritically accepted by the registration officers of boards of health. The registrars of New York and Brooklyn are especially referred to, but we "suspect," to use Dr. Osler's own verb, that they are not sinners above others, the certificate of death being seldom anywhere the subject of verification, except possibly where malpraxis or other criminality or vagueness is surmised. But this is Dr. Osler's view of the case:

"What is spurious malaria (meaning malarial fever)? I do not know. One form of it—the health board form—is a serious and very fatal disease, killing according to the last United States Census Report in New York city as many persons as does typhoid fever, in Brooklyn about one-third as many more. I suspect the Eberth bacillus, not the plasmodium malaria, is responsible for the major part of these cases. Other maladies, a motley host, from headache to biliousness, from keratitis to chilblains, are attributed to 'a touch of malaria.' Any slight ailment with a periodic tendency, any dubious trouble for which a diagnosis is not forthcoming, is put in the same category. While I do not deny that in regions where malaria is endemic and everybody comes under its influence, many obscure troubles follow in its train, I claim that the disease in the temperate regions of this country is well defined and easily recognizable, that north of the Chesapeake the fatal forms have become so rare that no health board should take a death certificate signed 'malaria' without investigation, and, lastly, that the widespread belief in an occult influence of the disease, in masked forms, and the modification by it of other affections, has no rational basis of support. It is just eleven years since I began the study of malarial fever in Blockley Hospital, Philadelphia—a skeptic as to the value of Laveran's work, to which attention was called in this country by Surgeon-General Sternberg and Dr. Councilman. I soon became convinced of its truth, and the results of my study of seventy cases was published in 1887. Since that time, at certain seasons, I have had almost daily opportunity to see malarial fever, and I have of late years been fortunate in having as my associate Dr. Thayer, who has made a special study of the disease, and in Baltimore has kept us in touch with the progress of knowledge in this department. A widened experience has only served to strengthen the conviction that in the practical diagnosis of the infectious diseases, the discovery of the hematozoa of malaria by Laveran takes rank with the finding of the tuberculosis bacillus by Koch."

Medico-Legal Testimony in Cases of Drowning.—Professor Brouardel, the dean of the Paris faculty, commenced a series of lectures on Medical Jurisprudence in 1895, which may possibly prove the crowning work of his career. He is devoting a year to each of the following subjects, and hopes to complete the series with the century: 1. Death and Sudden Death. 2. Asphyxia. 3. Hanging, Strangulation, Suffocation and Drowning. 4. Explosions. 5. Infanticide. He is considered the greatest living authority on Medical Jurisprudence in Europe, and his experience is based on innumerable observations, experiments and researches, assisted by the light of recent discoveries in science, which have thrown light on many subjects still inexplicable even in Tardieu's day. We translate his lecture on drowning in full as it appeared in the *Jour. de M. de Paris*, January 3.

The expert is summoned to state whether the person was drowned accidentally or committed suicide, or whether it is a case of homicide.

1. Accidents.—Generally speaking, when a person is accidentally drowned, the presumption is that there should be no traces of violence on the body. But there are cases in which they are found and incorrect interpretation of them has led many an expert to false conclusions. When a body is taken from the water, naked, and without traces of violence, the presumption is inevitable that the case is an accident. But it sometimes happens that persons are accidentally drowned under circumstances that convey the idea of homicide. Chaussier describes the case of a man found lying in the road with his face in a rut filled with water. Devergie relates a similar case, an individual drowned in a ditch containing only a foot of water. Another person, mentioned by Taylor, was drowned in a little melted snow. Tourdes also relates the case of a soldier who fell from the top of the ramparts at Strasburg into the fosse, which was frozen over, breaking the ice with his head as he fell, and drowning with absolutely nothing but his face in the water. In these cases the persons were drunk, and they were not only unable to rise, but even to make the slightest movement which would have removed them from danger. Similar accidents may happen to epileptics falling during an attack, or to persons seized with vertigo, or temporary loss of sight. Drunkards can even be drowned in their own vomit. An individual is found drowned, his head lying in a little water; the rest of the body is free. Is it an accident, a homicide or a suicide?

It is easy for a strong man to plunge and hold the head of a weak person in a pail of water. Should we therefore conclude that it is a case of homicide? Not absolutely. One old woman had the courage to drown herself by plunging her head into a pail of water. A letter she wrote just before committing the deed left no doubt as to her intentions. One can even be drowned with only the nose and mouth submerged. Even in cases of accident, traces of violence may be found on the body, which may have been acquired before, during or after the fall into the water. It is possible that the individual may have been engaged in a brawl the day before. It is necessary to be able to differentiate between the lesions made anterior to the submersion and those which may have been made at the moment. You know the story of the two students who had invited a couple of girls to supper. One of them becoming unbearable, they took her home, each holding her by the arm, as policemen take criminals to the station. When the girl awoke, in despair at finding herself cast off, she went and drowned herself in the canal. The police carried the body to the morgue as the arms were covered with ecchymoses. I performed the necropsy and testified that the ecchymoses had been made while she was alive, probably several hours before death; they were clear and circumscribed, but there was a slight suffusion around them, an extension produced by blood which had begun to change color. To determine the age of ecchymoses we have only vague data. In these cases we can only found our opinion on what we observe in the ecchymosis that follows a blow on the eye. "A black eye" varies in its dimensions and coloring for twenty-five days. It first presents a radiating aspect and a black coloration, after which it turns blue, then green and finally yellow, like bile, as the extravasated blood changes its color. Virchow has established the fact that in ecchymoses the final coloration of the blood is identical with that of the bile. When you find colored zones encircling ecchymoses you can assert that they were made prior to the drowning.

A person may make lesions on himself by falling into the water and they may be more or less serious and more or less singular. Taylor relates the case of a man who dived from London Bridge into the Thames. Instead of holding his arms together above his head as customary, he leaped into the water with his arms spread like a cross, dislocating both humeri. I have frequently had occasion to note the existence of fractures and enormous sanguine suffusions on the drowned. I remember especially one case. He had jumped into the water from the top of a bridge and struck his shoulders against the side of a boat. The ribs were fractured and there was a large accumulation of blood in the dorsal region. Sometimes the person falls on pointed objects, or on stones below the surface of the water. In other cases the skull is fractured by hitting the bottom of the river, shallower than anticipated. Tourdes relates the case of a man who was diving when another person dived on top of him; the contusions were very violent and he was only revived with great difficulty. Even after death the victims of an accident might receive lesions. In certain rivers, the Seine particularly, where there are numerous ferries, singular accidents might be produced in this way. Delens has published a very interesting work on the subject of the fractures and osseous lesions that are found on bodies taken from the Seine. His purpose was to prevent the errors in expert testimony which had been due to this cause. One case he describes was that of a body taken from the water, with a lesion of the mastoid apophysis, perforation of the parietal bone, and lesion of the breast, as the expert ascertained. Drawing his conclusions from these facts he deduced a crime and asserted that the individual in question had been stabbed in the breast and afterward shot, the bullet entering by the mastoid apophysis and emerging through the parietal bone. He failed to notice that the wound in the breast was 21 cm. long,

which is rather extensive for a stab wound. He also overlooked the fact that the mastoid apophysis was not fractured but worn through, and that the parietal bone had not been perforated. He also failed to notice that the fourth and fifth cervical vertebræ had disappeared. It was not difficult to explain these lesions; the idea of a crime should have been abandoned at once. The body had been caught on some towing chains and the movements of these chains had gradually produced the lesions, by friction. Delens relates other cases of the same description. I have seen entire limbs cut off by the screws of steamboats; the body of an infant was completely emptied of its viscera, in one case, by the stroke of a paddle wheel. Bodies may be dashed against the piers of a bridge; they may be mutilated by an oar or boat hook, or the grappling irons with which they are taken from the water. The body may be caught between two boats at the moment it rises to the surface of the water; it may be caught in the lock of a canal or mill dam and the head or a limb be cut off. After the Billoir murder when the victim was cut up into small pieces, every mutilated cadaver taken from the water was assumed to be a crime of the same nature.

I wish to call your attention to one other point; a lesion which is not made in the water, but which it is important to bear in mind. When a drowned person is taken from the water, attempts are made to restore him to life. If he has not been too long in the water, he is frictioned vigorously. These frictions rub off the epidermis and in the course of a few hours the body assumes a peculiar aspect which might mislead an inexperienced expert, causing him to ascribe them to lesions which do not exist in fact.

2. Suicides.—The presumption is also that there should be no traces of violence in drowning from suicide. But in reality all the lesions I have just been describing may be found on the body, and others besides, which it is well to note. In England the women who commit suicide by throwing themselves into the water, often wrap their heads in their skirts, and the impression arises that they might have been suffocated and, then thrown into the water. Persons are found drowned with their members tied in front or at the back; sometimes the arms are tied to the legs. This suggests again the idea of a murder, but I do not believe that murderers could tie their victims in this way without considerable trouble, unless they had previously made resistance impossible, and in that case traces of violence would be found on the body. These ligatures must be regarded as precautions taken by the person who wishes to commit suicide. He knows that he can swim perhaps, and mistrusts his ability to resist the instinct of self-preservation. Other suicides have been known to tie a stone or a heavy weight with a rope around their neck, to prevent the body from rising to the surface. The neck in these cases show the mark of the rope. Tourdes relates the case of a student who drowned himself after fastening a 25 pound weight around his neck; the body remained seventeen days in the water. The mark of the rope is not very evident as long as the skin is still softened from the effect of soaking in the water, but it grows more distinct and shows a deeper groove as putrefaction swells the cellular tissue.

It is important also to note the presence of the menses. Tourdes states that one-third of all the women he has examined who had drowned themselves, were found to be in the menstrual period. Some women at this period are peculiarly depressed with melancholy, even maniacal ideas, which may lead them to commit suicide. Double or family suicides present no medico-legal complications.

3. Homicides.—It seems as if the assassin must be much stronger than the victim to drown a person. However, this is not necessarily the case, as the victim may be taken unawares, and pushed into the water without a chance to defend himself. Casper mentions a case where a husband and wife were seated on the brink of a river, quietly conversing. Suddenly the husband pushed the wife, who fell forward into the river and was drowned. There was not a trace of violence on the body. *It is well never to reply in a positive manner to the question of the authorities in such cases.* Never say: "There are no traces of violence, consequently there has been no crime." Nor: "There are signs of violence, consequently there has been a crime committed here." Be satisfied to reply: "There are traces of violence. They can be explained variously." Or: "There are no signs of violence." Leave it to the authorities to interpret the facts you present. That is their task, not yours. As an example I mention a case that occurred a few years ago. A young man was found drowned in the Seine. The body showed no indications of violence, and the medical expert who examined it stated in his report his conclusion that it was a case of accidental drowning. It was not an accident, it was a crime. The young man had been amusing himself with another by climbing on the parapet of the quay, and his companion had suddenly pushed him into the water. The scene had been witnessed by others who testified to the fact. The medical expert therefore, who had been so positive in his report, found himself in an awkward predicament.

I had a similar experience recently when summoned to testify in the case of the Marquis de Nayve. You remember that the Marquis was accused of having murdered the young Menaldo, as the husband killed his wife. The Marquis had been out with Menaldo all day, and in the evening they reached an elevated spot on the road between Naples and Sorrento, where there is a sheer descent of 30 meters to the sea. Menaldo's body was found at the foot of this precipice. I was asked to state whether it was an accident or a homicide. It was too late to inspect the body. The report of the Italian medico-legal expert described the lesions that had resulted from the fall; fracture of the arm and fracture of the skull, such as characterize falls from an elevation. I stated that it was impossible for me to form a decision from the evidence. The question was also asked in this case whether a young man of Menaldo's age could have contemplated suicide. We know that the suicide of children is unfortunately by no means exceptional. The idea was also suggested that Menaldo might have been the victim of pederasty followed by assassination. The first expert asserted thirty-six hours after death, that all organs, especially the anus and penis were in perfect condition. The second expert who saw the body three months later, stated that the widely dilated anus denoted long established habits of passive pederasty. When gaseous putrefaction occurs, it dilated the anal orifice and obliterates the folds. By the end of three months all the characteristics of the skin and the rectal mucosa are effaced; all is uniformly green.

Homicide by drowning is frequently the result of a surprise. Hencke relates the case of a man who after seducing the daughter, invited the father to supper, under pretext of a reconciliation, and took advantage of his intoxication to push him into the water. The case is also known of a lad of 10 years in a boat with his weakly 5 year old sister; he lifted her in his arms and threw her into the water.

Zacchias remarks that a *necropsy imperfectly performed can never be performed over again.* This axiom should be graven on the memory, as it is of the utmost importance. An instructive instance is the case of a wealthy butcher who had retired from business and settled down at Cabourg. One day he went crab-fishing with his housekeeper and drowned her by holding her head under water. Some fisherwomen, behind a rock near by had witnessed the scene, and exclaimed: "That man is drowning that woman." The butcher went home alone, followed at some distance by the fisherwomen who wanted to find out where he lived. One stayed near the house, while the rest went to inform the mayor. He came and asked the man what he had done with his housekeeper, and finally had him arrested. The woman's body was found next day at low tide. A medical expert from Caen, inexperienced in such matters, stated that the woman had been drowned. His local colleague was astonished that the expert did not perform the necropsy, and that he did not consider worthy of notice certain lesions on the chin and lower part of the face, but assumed that these were caused by crab bites. He opened the chest, found the lungs congested, but did not remove them from the body and considered his diagnosis of death from drowning established.

Skin from the chin was sent to me for examination. I found it covered with small irrgular excoriations, with a sanguine suffusion in the subcutaneous cellular tissue. It was evident to me that these small wounds had been made by the skin having been pressed violently against some hard and irregular substance, such as sand. I have repeated this experience on cadavers and have always secured the same cutaneous lesions, but of course without the suffusion of blood. When the affair came into court, something very instructive for us happened. The lawyer for the defense asserted: "This woman died of cerebral hemorrhage, and I defy the experts to prove the contrary!" As the necropsy had not been made, they were unable to bring any proof to the contrary, and it was even impossible to prove that the woman had died from being drowned. The medical experts connected with the case were severely censured by the authorities. The moral to be drawn from this affair is, always to perform a complete necropsy when such a case is placed in your hands, no matter what the evidence of the facts may be.

As a general thing the affair is not a homicide by drowning, but the victim is thrown into the water to conceal a homicide. A few years ago Mme. Fenayrou, wishing to be relieved of Aubert, who was her lover, accompanied him to Chatou with her husband and her brother-in-law. Like a thrifty woman, she bought return tickets for herself and her family, but only a ticket one way

for Aubert, who was not to return. In their house at Chatou Aubert was killed by being pounded on the head with a hammer, and Fenayrou, drawing a sword cane, passed it three or four times through his heart, "that heart which has caused me so much sorrow!" as he exclaimed. To get rid of the corpse, they removed the clothing and wound around it 8 meters of lead pipe the size of gas piping, and threw it into the Seine from the bridge, never expecting to see it again. But in eleven days Aubert was found floating on the water near Pecq, dragging his 8 meters of lead pipe with him, buoyed up by the might of gaseous putrefaction. If Fenayrou before throwing him into the water had made an opening into the abdomen, the gases of putrefaction would not have accumulated there and altered the specific gravity of the body. It would have remained at the bottom of the river and Aubert would probably have vanished for ever. I relate this affair to show you the rapidity and power of gaseous putrefaction. The Fualdés sensational affair in 1817 was due to this cause. The victim was bled to death and the corpse thrown into the water, where it came to the surface in a few days.

One point more. When a physician without much experience in expert medical work is summoned to examine a body found in or near water, he prefers to accept the case as a drowning. If the body is putrefied, he shrinks from the necropsy. As an instance I mention the case of two physicians of La Manche, summoned to examine a body that had been found on the ground with the head in a pool of water. They concluded—without investigation—that the case was one of cerebral congestion, which had caused the person to fall into the water, when death had ensued from suffocation. The authorities, however, were informed of other details which rendered the assumption of a crime probable. Another expert was summoned, who was amazed that any one could draw the conclusion of cerebral congestion without having opened the cranium, which he proceeded to do, ascertaining that it was fractured. The two physicians were arrested and prosecuted for false testimony. This is the only instance of criminal prosecution on record in medical jurisprudence. They were acquitted on the ground that an error had been committed in entrusting them with a task which they were incapable of properly fulfilling.

4. Survivals.—The question arises when several members of a family lose their lives in an accident: Which member of the family survived the longest? It is often to decide the question of inheritance that medico-legal advice is sought, and this question seems to be the prerogative of accidents from drowning. In an accident that occurred between Honfleur and Havre, more than 200 persons were drowned—whole families wiped out of existence—and medico-legal testimony became of great importance to decide the settlement of estates. Fortunately for the expert, who is often unable to form any opinion in the matter, the French law states explicitly that when several persons due to succeed each other in turn all perish in the same accident, . . . the presumption is that survival depends upon the strength of age or sex. . . . If those who perished were all under 15, the presumption is that the oldest survived the longest. . . . If they were all over 60, the presumption is that the youngest survived. . . . If some were under 15 and others over 60, the presumption is that the former survived the longest. . . . If those who perished together were over 15 and under 60, the presumption is always that the male survived the longest, when the ages are equal or when there is only one year's difference. . . . If they were of the same sex, the presumption is always in the order of natural succession, that the younger survived the elder. . . . The presumption that under 15 the oldest survives, is contrary to the experience of science, which shows that infants survive longer than adults, especially in submersion.

The Levainville case is an example of the questions that arise in such cases. M. Levainville was mayor of Finisterre. Accompanied by his wife and daughter and others he went for a walk along the shore in very stormy weather, in October, 1870. The whole party ventured out on a narrow strip of land to an abandoned coast-guard building. A tremendous wave broke over the peninsula and washed away seven or eight persons, among them his wife and daughter. All perished. According to the law, if Mme. Levainville died first, all her property passed to her daughter, and from her to her husband. But if the daughter died before the mother the property reverted to Mme. Levainville's family and the husband did not inherit. The code referred to above was applied in absence of knowledge of the fact and the daughter was assumed to have survived the mother, and Levainville was declared the inheritor. The wife's family protested and Tardieu was summoned by them to investigate the case. Strange to say, his investigations established the fact that the wave did not sweep the whole peninsula simultaneously, but dashed over one part of the crest and carried off the group there before it swept the rest. The mother was in the first group and was dashed against the wall of the building. The authorities therefore decided that the mother died first, as she was swept away first and the severe lesions she received must have hastened her death before the daughter perished.

I was consulted in an analogous case. A husband and wife were boating in a small river when the boat sank and both were thrown into the water. The husband was seen struggling on the surface again and again, trying to save his wife, and then both disappeared. The question of inheritance then arose. Should the property pass to the husband's family or to that of the wife. Beauvais testified that the wife must have died first and the husband afterward, as he rose several times to the surface. The wife's family resided at Marseilles, and experts there testified that a person struggling at the surface drowns sooner than a person lying in a syncope at the bottom. They asserted that the wife survived the husband. I was called upon to decide the case, but I declared that I could not find anything in the evidence submitted to decide the case either way. It was possible that the wife may have been in a syncope, but there was nothing to prove this and no necropsy had been made. The general trend of opinion, however, was in favor of the husband's family, and the families finally compromised the matter out of court. It would have saved them considerable trouble and expense if they had done this in the first place. I do not wish to criticise the opinions of the experts who had preceded me, but I want to warn you against what I may call moral influences; it is very easy to allow one's self to be convinced by the arguments of the interested party who lays the facts before you, presenting them in the most favorable light and biasing the expert's opinion unconsciously to himself. In cases of this kind we must have courage to state frankly that we can not decide; we do not know, and let the articles of the code be applied. Tourdes in his excellent article in the "Dictionnaire Encyclopédique" gives some points on which a decision of the kind may be based, but they are not satisfactory. He says that we must bear in mind the relative strength and emotivity, and that the most impressionable are the most likely to survive as they are the most likely to succumb to syncope. Heart disease or any previous affection of the kind diminishes the resistance. He believes that a woman would survive a man as her garments would buoy her up for a while. Fodéré asserts that persons who know how to swim survive those who do not, which is evident. In accidents at sea we must ascertain, if possible, which person had life-saving appliances, and if they were injured by falling upon rocks.

These are all the data I can give you upon which to found your decision. In the vast majority of cases when you are summoned to decide the question of survival all you can do is to state your inability to decide the matter, and say frankly: We do not know.

Dr. Hughes on "Homeopathic" Physicians to the Insane.—Dr. C. H. Hughes makes the following reply to the contentions of Dr. W. A. Wilcox, the homeopathist, with regard to introducing homeopathic treatment in the Missouri State insane Asylum at Fulton.

"I make no war on homeopathy. I plead only the rights of the insane. And what I claim I concede. It is the insane man's right in a State hospital to have such medical treatment as he would have chosen for himself when sane and free to choose. Where the institution can have but one medical head, the rights of the majority interested should rule in the selection. The minority interest might be provided for in an annex institution restricted to homeopathic practice for the followers of that faith only. It might even be justifiable for the State to construct and provide a new institution conducted on that theory only, if it be sound policy now to do so after the light of clarifying science has dawned so full and free and with such dissipating force on this quasi-therapeutic delusion of the past, when visions of the fancy and fanciful personal 'provings' rose out of the scientific darkness of the first decade of the century.

"The searchlight of scientific observation and deduction has dispelled the delusion that disease implicates the spiritual nature of man; that drugs contain spiritual essences or dynamic potentialities evolved by trituration and dilution, and not sufficient of the apparent law of *similia* now remains on which to longer justify the maintenance of even the semblance of a sectarian medicine.

"Today in other States, as in New York, the more enlightened homeopathists have forsaken this dogma as an exclusive tenet of medical practice, dropping their distinctive homeo-

pathic designation, which is more suitable as a business man's trade-mark than as the proper title of a doctor of medicine, and, practicing on the broader precepts of a more liberal practice, simply as physicians, they are admitted to equal fellowship with the regular practitioners. The law of *similia similibus curantur morbi* had some appearance of a truth in therapeutics at the time that Hahnemann published his organum 80 years ago. But the revelations of physiologic science and the provings of biologic experiment, the lens of modern bacteriology and the crucible of bio-chemistry have enabled all but the blind to see the fallacy of the Hahnemannian law and the foolishness of the homeopathic dictum, 'the smaller the dose the greater the effect.' The high potentist is a *rara avis* now, even in the ranks of homeopathy.

"The present asylums were provided for under regular medical auspices. The newer school of scientific medicine, always called the old school, or allopathic school by sectarian physicians, was instrumental in providing them for the mentally afflicted of the State, just as it was the first to strike the shackles from the lunatic, bringing him from his darkened and neglected dungeon into the light of day, and treating him as a mentally maimed and afflicted friend and brother.

"Regular medicine refuses to be dominated by any exclusive dogma, visionary theory or rule of practice as too restrictive, inadequate and unscientific in the light of modern medical progress for a profession whose mission is to rescue and restore by all and every possible means potent to save.

"If the believers in homeopathy or any other theoretical system of sectarian medicine wish a State institution founded for their benefit, the proper way to secure one is to induce the Legislature to vote a new building for that purpose. The homeopathic asylum at Middleton, N. Y., was built for such purpose by authority of the Legislature of that State as an exclusive homeopathic institution. It was not built as a regular institution, then seized and appropriated to homeopathy with its hundreds of inmates and thousands of tax-payers supporting it, all opposed to the system, yet forced to accept homeopathic ministrations.

"In the present instance it is proposed to seize and divert to a purpose not originally designed, without due notice or legislative action. Governor Stephens will not on mature reflection I think do this. To seize the Fulton Asylum for the purpose proposed would be executive robbery and assasination of the rights of the insane there domiciled.

"The relative merit of homeopathy and regular medicine is not the question. Nor is the question one of 'crushing truth to earth;' nor of curing by similars or contraries, but of justice to the insane now in the Fulton Asylum. Nor are my qualifications as an alienist and neurologist germane to this question though I hold a parchment, not held by any other in this vicinity, of honorary membership in the British Medico-Physiological Association, never that I know of bestowed upon the unqualified, unless it be in my own case.

"My friend, Dr. Wilcox, was a pretty good regular practitioner before he put the new wine into the old bottles of regular medical experience. He practiced the regular way the best he knew how, pretty much, as he does now. In fact, most of my homeopathic medical acquaintances who have achieved success in practice in this city have been regular practitioners and do not disdain to use the elegant tabloids and tablets hypodermically, and the alkaloidal pilules of modern regular medicine. They are naughty fellows and steal our thunder and ought not to do it, and call it homeopathy. But they do it all the same.

"But in medicine as in theology a man may go in as a hard-shell Baptist and have to stay with his brethren, even though his views of salvation may broaden as he grows older in Christian experience."—*St. Louis Republic.*

PRACTICAL NOTES.

The Antitoxic Power of the Thyroid Gland.—Recent experiments on dogs have shown that after extirpation of the thyroid gland toxic substances are found to much greater extent in the circulation than before, and that administration of thyroid extract will diminish this amount.—*Cbl. f. Chir.*, March 13, from *Rivista Md. e Terap.*, 1896, No. 9.

Menorrhagia due to Uterine Arterio-sclerosis.—Reinicke has become convinced by the information derived from several necropsies that menorrhagia is frequently produced by sclerous degeneration of the uterine arteries. The impossibility to contract is therefore the cause of the continuous sanguine flow from the arteries, and the usual methods of treatment are necessarily impotent. He states that the failure of ergotin to arrest the flow may be considered presumptive evidence of the sclerosis. The only cure is ablation of the uterus. Except in very severe cases, he advises waiting for the menopause, with repose in the horizontal decubitus if possible, and vaginal tampons in the case of workingwomen.—*Semaine Méd.*, March 17.

Coccionella in Whooping Cough and Asthma.—A Swiss physician has found in an experience of 80 cases that whooping cough disappeared in six to eight days with the following treatment. It also relieved bronchial asthma when all other remedies had failed: Coccionell. subt. pulv., 0.05 to 0.2; ammon. carbon., 1.0 to 2.0; syr. aurant., 20.0; aq. dest. q. s. ad 100.—*Therap. Woch.*, March 7.

Treatment of Metritis with Intra-uterine Applications of Airol.—The simplicity and harmlessness of this treatment recommends it as well as its efficacy. It does not require repose in bed, and the improvement is manifest in a couple of days. A tampon moistened with an emulsion made of 4 c. c. of glycerin mixed with 1 gram of airol, is inserted into the cervix, ½ cm. from the external orifice, and the vagina plugged with a large cotton tampon dipped in the same emulsion diluted one-half with glycerin. Extreme gentleness in dilating the cervix and antiseptic precautions are imperative. The tampons are renewed every other day.—*Semaine Méd.*, March 17.

De Marsi's Operation for Vaginal Cystocele.—He first makes a longitudinal, median incision through the mucous and submucous tissues of the anterior vaginal wall, extending from the fornix to the suburethral tuberculum, if necessary, and then two small transverse incisions, perpendicular to the first incision, at each end of it, and raises the square side flaps thus formed. He next sutures the two attached edges of these square side flaps together, and reduces the prolapsus, completing the operation by suturing the free edges of the flaps. By this means a solid foundation for the vaginal wall is secured and threatening prolapsus uteri averted. The same process could be applied to rectocele, with slight variations.—*Gaz. d. Osp. e d. Clin.*, March 7.

Therapeutics of Epilepsy.—Dr. F. C. Müller concludes an article on this theme in the *Wien. klin. Rundschau*, March 21, with an urgent appeal to the physician in such cases to bend every energy to seek and remove the cause, instead of blindly prescribing bromid in every case. He describes a typical and puzzling case, a girl of 16, who was immediately cured by appropriate treatment after the discovery of large numbers of the oxyuris in her intestines; others by putting an end to unsuspected onanism, or alcoholism or mental over-exertion, that had been the predisposing cause.

Extirpation of the Gall Bladder and Part of the Liver.—Ullmann presented a patient at the meeting of the Vienna k. k. Med. Gesellschaft, March 12, whose gall bladder he had removed six weeks before, on account of a tumor and accumulation of stones. The neoplasm involved the liver also and the corresponding portion was resected. After using the Paquelin the hemorrhage was serious until a wedge shaped piece was resected, and the liver tissue folded and laterally compressed, fastening the stump extraperitoneally. The *Wien. klin. Rundschau* remarks that it is the fourth case of extirpation of a tumor of the liver on record.

Medico-legal Importance of the Excrements.—Prof. Moeller has an article in the *Wien. klin. Rundschau* of March 14, calling attention to the value of the testimony afforded in criminal proceedings by microscopic examination of the dejecta. He suggests that criminals arrested on suspicion should be interrogated as to what and where they had eaten recently, and the feces will confirm the truth of their assertions or the reverse, disprove an alibi, etc. He mentions two separate

instances where the criminals were traced and brought to justice by casual discovery of fig seeds in their excreta, and adds that the microscope should be used more frequently than at present in criminal proceedings.

Favorable Effect of Laparotomy on Tuberculous Peritonitis.—Gatti has produced experimentally tuberculous peritonitis and then cured it with a laparotomy; gradually the tuberculous cells and the bacilli disappear, the products of degeneration are absorbed and a process of reorganization ensues, in the course of which the peritoneum becomes normal not only to the eye, but to histologic and bacteriologic tests also. The process requires six to eight months, and the laparotomy, to succeed, must be performed at the proper moment, neither too soon nor too late, the tubercle fully developed and before the caseous degeneration has begun. As it is difficult in the clinic to determine the exact moment when the operation is needed, Gatti recommends a second laparotomy if the first proves ineffectual, and it was noticed that caseous degeneration had not begun. Burci ascribes the effect of the laparotomy to the combination of trauma, change of temperature, admission of light and air, etc.—*Gaz. d. Osp. e d. Clin.*, No. 13, 1897.

Resection and Extirpation of the Larynx for Malignant Tumors.—Many lives could be saved if the diagnosis of malignant tumors could be made earlier. A writer in the *Beiträge z. klin. Chir.* urges physicians and students to master more thoroughly and universally the technique of laryngoscopy, so that malignant neoplasms could be discovered more frequently and removed in their incipient stages. Mikulicz has found that a normal function can be retained if two-thirds of the larynx can be saved. Important in this respect is the secondary suture to decrease the size of the wound, and the prevention of the formation of epidermis from the edges in. In thirteen cases operated, four have remained in good health since, one and one-half to eight and one-half years. One succumbed shortly after the operation; another died later of phthisis. In five cases the tumor grew again in three to ten months, with a fatal result in four. In six cases superior tracheotomy was performed, and inferior in the rest. Hemostasis was secured by ligatures and lateral compression; only once was the thermo-cautery necessary. He considers frequent changing of the bandages very important. Food was taken by the sound through the wound or lower nasal passages. He has never applied an artificial larynx.—*Cbl. f. Chir.*, March 13.

Diagnosis of Primary Malignant Tumors of the Pleura and Lungs.—Dr. G. Zagari of Naples, having had occasion to observe seven cases of this character, has made a special study of the difficult subject of diagnosis *intra vitam*, and groups the special clinical symptoms as follows: 1, insidious commencement of the affection; 2, marked general debility; 3, absence of fever; 4, persistent, increasing pain; 5, circumscribed edema of the chest; 6, development of the lymphatic ganglia on one side of the thorax, exclusively or more prominently; possible turgescence of the veins in the anterior and lateral parts of this side; 7, sweats and more elevated temperature on one side of the thorax; 8, distress in breathing and more intense oppression than can be ascribed to the quantity of fluid obtained by puncture; 9, irregular distension of the thoracic cage, especially in the superior and anterior region of the chest; 10, intercostal spaces neither prominent nor dilated; 11, complete dulness, without the slightest elasticity, in the superior and anterior region of the thorax; zones of dulness close to zones of resonance; 12, dulness over the manubrium or the sides of the sternum, which indicates not only the displacement of the mediastinum toward the sound side, but also the irregularity of this displacement; 13, Skodaic resonance over the clavicle and sternum; 14, the laryngo-tracheal murmur distinctly transmitted to the superior regions; 15, persistence of the plessimetric and acoustic phenomena even after evacuation of the fluid in the pleural cavity; 16, this fluid is very thick, rich in fibrin, hemorrhagic, with histologic elements special to the neoplasm; 17, peculiar sensation of having penetrated into a compact, deep, thick mass, when inserting the needle; 18, puncture is without effect, or the fluid forms rapidly again; 19, displacement of the heart and liver, out of all proportion to the amount of liquid withdrawn.—*Arch. Clin. de Bordeaux*, March, 1897.

Treatment of Persistent Vomiting in Pregnancy.—The pulse and the loss of weight must be carefully watched by the physician after he has established the fact of pregnancy. If the pulse is still normal and the emaciation is not extreme, he still has time to attempt mild therapeutic means, but if the pulse has increased and the emaciation is approaching the inevitably fatal limit (loss of 40 per cent. of the original weight), then the uterus must be treated locally, first with digital dilation of the cervix and straightening the uterus. It sometimes happens that straightening a slight flexion will arrest the vomiting at once. The last resort is abortion, which should never be done without the presence and advice of one or more other physicians. The mild means are inhalations of oxygen, spraying the epigastrium with ether, application of a bag of hot sand along the spine, purgative and nutrient enemata, hypodermic injections of artificial serum, etc., and especially galvanization of the pneumogastric. The positive pole of an apparatus with continuous current is applied above the clavicle at the attachment of the sterno-mastoid, while the negative electrode, a plate 9 by 13 cm., is placed on the epigastrium. The current should not be strong, 8, 10 or 15 ma., and it should commence and end very weak, to avoid irritation and excitement of any kind. The séance should last fifteen to thirty minutes and be repeated several times in the course of the day. This electric treatment is perfectly harmless.—Delbert in *Jour. de Prat.*, 6, 1897.

Phosphorus in the Treatment of Rickets and Neurasthenic Conditions.—Hartcop, in conformity with other observers, finds that rickets has been declining in frequency within the last twenty years, a result that is doubtless due to the more or less rigid prophylaxis that is maintained in families by the practitioner. There can be no doubt that at every suitable opportunity the mother should be enlightened as to the nature and results of the disease, but should at the same time be instructed as to its curability. The instruction of midwives on this and similar questions, would do away with much prejudice, but the physician himself should demolish the old fable, that painful teething is a cause of rhachitis, when it is well known that it is rather an effect. The treatment of rhachitis with phosphorus, since Kassowitz, of Vienna, in 1883, introduced it as a remedy, has given the best results. The failures which have occasionally been reported, were due to its administration during too short a period or to doses that were too small. The remedy is best administered in cod-liver oil, which given from a warmed spoon is usually well taken; in summer, or when it is not well borne (which is rare) it may be given in an emulsion of linseed oil. A cure is always obtained even in the most stubborn cases, not only of the bone symptoms, but of all the complications, which are so numerous in rhachitis. Even intestinal catarrh is no contraindication to its use; it is only necessary to add a small amount of opium to the mixture. It is of the greatest importance, however, that both parents and the physician have patience enough to carry on the treatment for a long period. He orders children from 1 to 5 years of age, 0.0006 grm. of phosphorus twice daily, one hour after meals; and 0.0006 grm. to children 5 to 12 years old in increasing doses. Proper food, fresh air, and attention to the skin are adjuvants which must not be neglected. The improvement in their mental condition was particularly noteworthy. Sleep became quieter, sweating disappeared, their nervous irritability improved, and the intelligence increased. This induced him to administer phosphorus to other cases without rhachitis, but suffering from brain irritation, and also to others who were suffering from brain fag, notably with a tired feeling and continual headache. The result was very satisfactory.—*Münchner med. Wochenschrift.*

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SATURDAY, APRIL 17, 1897.

DRINK AND HARD TIMES.

An admirable trade journal, the *American Grocer*, has published, with comments, the figures furnished by the Government, the Internal Revenue and the Customs Bureau, chiefly the former, as to the consumption of liquors in the United States. It finds that there has been a marked decrease, so that in 1896 the amount of spirits used is almost one gallon per capita less than it was in 1888, thus discrediting apparently the theory so often advanced that in hard times when men are out of work they drink more to drown their troubles. It also claims that the decrease in spirit consumption is not compensated for by an increased usage of fermented liquors, such as beer; in support of this it shows that while the consumption of these rose to about sixteen gallons per head in 1892, it has since fallen off to about fifteen and a half gallons, not a very striking but still a perceptible decrease. The total expense for intoxicants in the country, it states, has decreased from over a billion in 1892 to less than nine hundred millions in the year just closed. From these it draws the conclusion that hard times make men less dissipated perforce and, for the time being at least, cause this to be a more temperate nation.

There is no just reason why the liquor business should not share in a general business depression, in at least a reduction of its total sales, though it is almost the only line of trade that does not lower its retail prices, on which there is certainly a very large margin of profit. The average drinker who is not a drunkard ought naturally to be hardly expected to indulge his occasional appetite as freely as in flush times, and the remarkable fact that these figures indicate is not that they show this to be the case, but that the consumption of beer, the popular drink, has decreased so little. A loss of a little over three per cent. in four years of hard times after a rise of over thirty per cent. in the preceding six years is not a very striking decrease, as it still leaves us using annually nearly one-third more per capita than was the case ten years ago.

The decrease in spirit consumption is more striking, but it is a question whether that means all that it might appear to. The general depression in trade and manufactures would necessarily affect the amount of alcohol used in the arts and generally for other purposes than that of drink. What proportion of the whole decrease is thus to be accounted for, we have no ready means of estimating, but it must be a very appreciable one. The apparent fact that over seventy million people in this country used less strong liquor in 1896 than did about sixty million in 1887 is, however, encouraging, and is in accordance with the probabilities. The average moderate drinker when overtaken by hard times naturally would give up his most expensive drinks first, and we therefore can probably account for some of the 30 per cent. decrease in our national whisky bill since 1892 in this way. But while a large part of this has to be reckoned as due to the lessened usage of alcohol in the arts, etc., and our total drink bill is only reduced some fourteen per cent. in the same period, one can not so certainly assume that we are very rapidly progressing toward a higher practical temperance standard.

These facts have a medical as well as a sociological bearing, since the drinking habits of a people bear directly upon their physical as well as their moral and economic welfare. It is somewhat encouraging to think that the milder intoxicants are replacing in common use the stronger alcoholic beverages, and there is, from an analysis of the figures, perhaps some reason to hope that this is the case. The excessive use of beer is not to be recommended from a medical point of view, but it is better than the excessive use of whisky or other stronger distilled liquors. Whether the greater extension of the habit of beer-drinking among the general population, which the statistics might be held to indicate, has a lesser tendency to produce a race degeneration than the less extended but individually more disastrous habit of spirituous imbibition, may be a question for settlement by the experts. But if hard times will do anything in any way to check the ever aggressive evil of intemperance, it will be some compensation for what we at present have to endure and another instance of the chastening uses of adversity.

THE ETIOLOGY OF CHOLELITHIASIS.

A very convenient classification of the causes of cholelithiasis is that of GUMPRECHT (*Deutsch. Med. Woch.*, 1895, 224). He divides them into: first, *physical*, such as age and sex; second, as *sequelæ* of other diseases; third, *chemic* alterations in the composition of the bile; and fourth, *bacteriologic*.

Age is an important predisposing factor. With advancing years we find an increase in the proportion of cholesterin in the blood, and gallstones are recognized as an appendage of middle and late life. BRINTON gives the average age at which they are found as 53⅓ years. They are occasionally seen even in newborn children, though of 395 cases collected by HEIN only 15 were under 25, and only 3 were under 20 years of age.

As regards sex, all authorities seem to agree that they occur more frequently in the female. Authors differ, however, as to the relative proportion; thus BRINTON says they are four times more frequent, others give five to two, three to two, two to one, etc. The predilection for the female sex would seem to be due to sedentary habits, which are universally recognized as a potent factor. Obesity is closely allied to the foregoing, and BUDD and MURCHISON state that they are more common in persons of stout habit. FRERICHS, however, makes no mention of obesity apart from sedentery habits, and some authorities advance the view that obesity is merely a coincidence of cholelithiasis and depends on the same causes as the latter.

Confinement has been noticed to favor gallstone formation, for instance, in prisoners and stall-fed cattle. According to THUDICHUM these calculi are not found in wild animals until they have been in captivity for some time. Lunatics lead rather sedentary lives, so we may expect to find biliary concretions more frequent in them, if this factor has any influence. On examining the statistics we find this to be the case. BEADLES (*Jour. Mental Science*) found them in 36 per cent. of necropsies on insane females. GORSTELL stated that in 1,400 examinations at the West Riding Asylum calculi were found in 20.28 per cent. SNELL (*Neurolog. Centralbl.* June 1, 1893) in 1,000 necropsies found them in 9.2 per cent. of the 500 examinations of the insane males, and 19.4 per cent. of females. The forms in which cholelithiasis most frequently occurred were dementia following melancholia, epilepsy and senile dementia.

Here it may be pointed out that statistics as to the frequency of gallstones vary. THOMA, in his General Pathology, says they occur in 25 per cent. of all bodies over sixty years of age, MAYO ROBSON and NAUNYN in 10 per cent. and SCHRODER, from the necropsies at the Strassburg hospital, 4.4 per cent. of males and 20.16 per cent. of females. PAULSEN (*Centralb. f. Chirurg.*, Feb. 4, 1893) calls attention to their infrequency in Denmark. From 1870–90 only 111 cases (30 males) were treated in the Copenhagen hospital, and during the same period 9,172 necropsies were performed. Of the 5,448 males calculi were found in 2.34 per cent., and of the 3,724 females in 5.9 per cent. HARLEY thinks the influence of locality, if there is any, is due to the dietary and states that in his experience patients suffering from this affection are usually fond of fatty foods. He found these calculi very frequent and of large size in Russia, where oleaginous food is much used, while in Finland, Sweden and Denmark, where fish is the main article of diet, he states they are much less common.

In regard to gallstones as sequelæ of other diseases FRERICHS states that they frequently develop after long illness. In most instances they are apparently due to the long confinement to bed, which would seem to corroborate the theory of sedentary habits being a factor. The frequent association of gout and cholelithiasis is looked upon by several authors (HARLEY, MURCHISON, TROSSEAU) as pointing to a close relationship between these two affections. As calculi are usually found in carcinoma of the gall bladder, the question arose as to which was the primary affection. At first opinions differed on this point, but recent statistics all agree in looking upon the calculi as the cause, not the result. COURVOISIER found them in 74 out of 84 cases, BRODOWSKI in all of 40 cases, BERTRAND 14 of 15, and SIEGERT believes they occur in 95 per cent. of primary carcinoma. ROGER WILLIAMS, in a note to the *British Medical Journal* (Sept. 9, 1893) says in his experience gallstones are more frequently found associated with cancer of the breast than that of most other parts of the body. According to DUFORT (*Rev. de Med.*, 1893, p. 274) phlegmonous or gangrenous cholecystitis is sometimes met with following an attack of typhoid fever. HAGENMULLER collected eighteen of these cases in 1876. BERNHEIM states that he has seen the first attack of biliary colic occur during the course of typhoid. As we shall see later, CHIARI found the typhoid bacillus in the gall bladder in several cases of typhoid. DUFORT thinks the B. coli may also cause the cystitis in typhoid.

Coming now to the *chemic* causes of cholelithiasis it is evident that all the constituents of gallstones can be found in normal bile, save mucus, epithelium and foreign bodies, such as parasites and their eggs. It is also probable that if the bile continues healthy, the elements forming the calculi will remain in solution and not separate. What then causes the formation of these concretions? According to NAUNYN biliary stasis is the primary cause. As we have seen they are more common in the aged and in persons of obese or sedentary habit, all conditions favoring stagnation. With biliary stasis we get a catarrh with casting off of the epithelial cells; these furnish quan-

tities of albumin. This albumin leads to the precipitation of bilirubin, which combines with the lime salts. In addition we have cholesterin, which is usually the principal component of gallstones. Cholesterin is found in many vegetables, in eggs, red blood cells and the brain. As it is so important a feature in the production of calculi it has been suggested that the use of foods containing it be restricted as much as possible in persons subject to cholelithiasis.

With the catarrh it is possible to have infection of the contents of the gall bladder, so we may have *bacteriologic* causes added. When the normal bile of man or animals is contained in the healthy biliary passages and periodically discharged it is sterile (GILBERT and GIRODE). While bile is aseptic it is not antiseptic, so pathologic changes allow the entrance of microörganisms from the duodenum or from the blood, thus infecting the bile. Microbes have been found both in calculi and in the contents of the gall bladder. GALLIPA in 1886 was the first to announce "il y a des parasites dans les calculs biliaires." LETIENNE found B. coli, S. albus and S. megatherium, and DUPRE found the S. albus in three cases. CHARCOT and GOMBAULT, after ligating the common duct, found that the bile above the ligature became infected. Here as elsewhere in the intestinal tract the B. coli plays an important role. NAUNYN, after ligating the ductus communis so as to produce stasis, injected B. coli into the gall bladders of healthy dogs and found the animals speedily died with evidences of acute cholangitis and general septic infection. NETTER, GILBERT and GIRODE also found the B. coli.

CHIARI has lately investigated a series of twenty-two cases of typhoid fever. In all these cases save three typhoid bacilli were obtained from the gall bladder. They were generally present in considerable numbers and in fifteen were obtained in pure culture. In thirteen out of the nineteen cases there was inflammation of the gall bladder with infiltration of small cells, edema and hyperemia. Cultures from the heart's blood, the contents of the thoracic duct, and the cerebro-spinal fluid were all negative. The diagnosis of typhoid was confirmed in the entire series of twenty-two cases by cultures from the spleen, mesenteric glands, etc. The routes by which the bacilli reach the gall bladder may be, according to this author, either by the blood, by the bile ducts, or directly through the walls of the gall bladder itself. CHIARI regards the last method as very unusual and owing to the difficulties in experimentation he does not attempt to decide between the other two. The bacilli undoubtedly multiply in the gall bladder and thinks they possibly may cause post-typhoid cholecystitis, gallstones and relapses of typhoid.

GILBERT and FOURNIER have lately published a paper (*C. R. Soc. de Biologie*, Feb. 14, 1896) on the role of microörganisms in the formation of gallstones. These observers examined a number of stones from human beings mostly, with a few from cattle, and of different ages. In the old stones the cultures were sterile, save in one case. In more recent stone, coverslips showed organisms from time to time which could not be cultivated. The fresh stones gave cultures and coverslips of B. coli. As a result of their observations these authors conclude that the gallstones are due to the action of the microbes contained in them. They are also of the opinion that while different organisms may cause cholelithiasis the B. coli is most frequently found.

INSANE KINGS.

BISMARCK, who opposed the marriage of Frederick (Crown Prince of Prussia), with the daughter of Queen Victoria (on the ground that she was a scion of the "crazy and scrofulous Guelphs") showed a prophetic insight into the results of those hereditary defects which Dr. E. S. TALBOT of Chicago demonstrated to exist in aristocracies and royalties generally.[1] The eccentricities of William II. of Germany seem to fully justify BISMARCK'S objection. The recent performances are curiously like those of King Ludwig of Bavaria antecedent to that suicide and homicide which resulted in a great loss to medical science through the death of the cerebral anatomist GUDDEN. The socialist newspapers outline the artistic, architectural, sartorial, musical and pugilistic performances of William II. in a style that strikingly resembles the Suetonian sketch in 1884 of Ludwig's performances and which testimony taken in 1886 by the Bavarian Lunacy Commission (Drs. GUDDEN, HAGEN, GRASHEY and HUBRICH) demonstrated to be correct. The stigmata of degeneracy notoriously present in William II. of Germany, the insanity of his grand-uncle Frederick William IV. and that present in his paternal grandmother's ancestry lend emphasis to the fear BISMARCK expressed of the taint in the Guelph-Wettin blood, which extends even to the inheritance of hemophilia. The *British Medical Journal* (a decade ago, anent the political complications consequent on the larynx cancer of Frederick) remarked that the short reign of a wise ruler stricken with a fatal disease is better than the long rule of a half-imbecile ruler affected with chronic disorder. The *British Medical Journal* here recognizes fully the difficulties, even in constitutional monarchies, of securing regencies in case of even notoriously insane kings. The sea-kings were able to ravage Christendom through the mental defects consequent on epilepsy of the Carlovingian and Merovingian dynasties. The lucid period of the paroxysmally excited paranoiac is peculiarly dangerous in this respect, as witness the cases of Wencelaus (Emperor of Germany and King of Bohemia), Charles VI. of France, Richard II. and

[1] JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION, vol. xx, p. 111.

Henry VI. of England, Eric XIV. of Sweden, Christian VII. of Denmark and Ivan the Terrible of Russia. Much stress has been laid on the case of Charles II. of Spain, who concluded the dynasty which ruled Spain for nearly four centuries; but the European difficulties resulting therefrom would probably have occurred on the extinction of the dynasty irrespective of the mental state of its last member. The instances of most importance were those of George III., Christian VII. of Denmark and Ludwig of Bavaria. George III., though the scion of a dynasty created by a parliament representative of the people and destitute of hereditary right, attempted throughout his reign to be an absolute king. His shrewd grandfather gave him credit in boyhood for just sufficient intelligence to read to his mother. In mental make-up he resembled closely his famous insane ancestor, Ernest the Pious of Hanover. His mother had filled him with religious cant just sufficient to make him conceal his liaisons in brutal fashion. He had an admiration for art of the artificial, weak, classic style; for music of the street band style; for drama of practical joke, realistic type, and for church architecture of packing-box type. In these proclivities he displayed less intellectual power than his morally insane son, George IV., than Christian VII. of Denmark, or than Ludwig of Bavaria. In all these particulars he closely resembled his descendant, William II. of Germany. George III. was several times violently insane and died chronically insane.

The country was ruled as a regency for several years by the moral imbecile afterward George IV., who himself had delusions about having won the battle of Waterloo. George III. was, like all paranoiacs, most dangerous when least demonstrably insane. During his periods of seeming lucidity he had all the cunning, inventive, stupid egotism of the paranoiac and, as GREEN ("History of the English People") remarks, the shame of the darkest hours of English history lie wholly at his door. Lord CHATHAM, whose counsels might have thwarted much of this shame, was stricken down with gouty insanity during the critical period of the American troubles. The Americans were taxed in defiance of CHATHAM'S denunciation of the unconstitutionality of this and King George III. ruled the country through the ministry formed by CHATHAM. Harsh laws, repellant to the spirit of the English common law, made death the penalty for almost all offenses against prosperity of person, in order to swell the coffers of the King with goods confiscated from the felon.

George III., when he became demonstrably insane, was placed under the care of Dr. WILLIS, who kept a private insane hospital conducted on excellent principles. When the paroxysmal excitement quieted down, the tories asserted the king had recovered, and in this were supported by Dr. WILLIS and his son, and opposed by Dr. WARREN. George III. was declared sane by the English judges. Dr. WILLIS was given a pension of 7,500 annually for twenty-one years, and his son one of 3,250 annually, for life. Insane paroxysms recurred from time to time, until it became demonstrated that the case was a chronic one, and a regency was established. George III. reigned fifty-eight years.

The same arbitrary characteristics and artistic tendencies, but with greater demonstrable sexual perversion and greater intellectual powers were legally shown to be present in Ludwig of Bavaria and Christian VII. of Denmark.

Christian VII. was coarser but less hypocritical in sexual debauchery than George III. He was equally suspicious, and while he had greater intellectual power than George III. in art, science, music and architecture, he was as inventively stupid in political matters. Neither of the two compared for political foresight with Ludwig of Bavaria, the patron of WAGNER. WAGNER would probably not have risen to the height he did but for Ludwig, whose musical and artistic criticism of the performances he insisted on enjoying alone, prepared WAGNER for the onslaught he later encountered.

Ludwig, in 1867, then at the height of his renown, courted at once by France, Prussia and the ultramontanes, highly esteemed as a discerning patron of art and music, met MOREL, whose keen eye saw the mental and physical stigmata of degeneracy, and who prophesied the coming catastrophe. Ludwig, by siding with Prussia, enraged the ultramontanes. All the material they had collected was (like that collected by the Prussian agrarian party against William II.) placed in the hands of the socialists. In 1884, the *Zurich Social Demokrat* detailed his mental and moral defects and paralleled them with those of Nero. By June, 1886, Prince Luitpold, the king's uncle, was pronounced regent, the immediate heir to the throne, Otho, Ludwig's brother, being a paranoiac with homicidal tendencies. June 12, 1886, Ludwig drowned Dr. GUDDEN and himself. Otho became king, but Luitpold remained regent.

LEGISLATION AGAINST DEGENERACY.

One of the results of the vulgarization of the Lombrosian theories of human degeneracy by such works as those of NORDAU and others, has been to give rise to a number of rather noteworthy propositions, some of which it has been proposed to realize by legislation. A bill is said to be now before the Texas legislature, prohibiting the marriage of those affected with any serious hereditary disease or taint; an act has, it is said, been passed in Connecticut forbidding the marriage of epileptics, and other similar legislation will probably be attempted in other quarters. The difficulty with all these propositions is not that they are not

good in themselves, at least in purpose, but that they are all more or less impracticable. Besides the difficulty of quelling or restricting the strongest animal impulses, that is met with everywhere in the endeavor to keep up and improve the moral standard and meet the needs of ordinary social morality, we have in this case an attempt to meet much less tangible conditions which can sometimes even altogether escape detection. Moreover, the public sense of justice would revolt sometimes against a strict construction and execution of laws that restrict natural rights in cases where there is, as there may easily be, a possible doubt of their applicability. In case of tuberculosis, for example, which is one of the diseases it is proposed to make a bar to marriage, we have learned to recognize, of late years more than ever before, that it is an almost universally disseminated infection from which few of us entirely escape and yet from which also the recoveries are much more numerous and complete than had hitherto been supposed. Epilepsy also is a symptom indicating cerebral instability, but it by no means invariably indicates an incurable organic defect. How is a law against the marriage of epileptics to be enforced strictly when we know that there are many individuals who have had perhaps only one or two fits in the course of a long life; or who have perhaps at some critical period had them frequently and none at any time thereafter? Nevertheless they can never be said to be absolutely free from the liability to the taint of epilepsy. As regards insanity, we yet know comparatively little of the real conditions underlying most types of mental disease, and there are very many cases where injustice might be done by the legal disability imposed by the proposed legislation.

The chief defect of all these proposals is that they are too vaguely stated and provide no method for the rational carrying out of the reforms they advocate. The difficulties in their way seem to be not fully appreciated and the legislation is in this respect inconsiderate. One of the most elaborate and complete of these projects is reported from France, where Dr. TOULOUSE, a well known writer on mental diseases, who has recently also been prominently before the public as the author of a rather sensational analysis of a noted French novelist, is the author. He proposes that epilepsy, mental weakness, cancer, syphilis, alcoholism, and tuberculosis should be made legal obstacles to marriage, and that persons intending to marry should declare these diseases before the marriage, and failure to do so shall be a legal ground for divorce or for fine in case a defective offspring results. If marriage is insisted upon in spite of and after declaration, the State shall have the right to interfere and prevent its consummation.

It is further proposed in Dr. TOULOUSE'S plan that physicians shall be compelled by law to report to the authorities all cases of these disorders, so that a record can be kept of every individual's disabilities. This will not be open to the public, but is intended to serve as a check upon the declarations made by the parties, so that the State can intervene and prevent dangerous alliances, for the public good.

Dr. TOULOUSE'S plan is in some respects better considered than most of the others, but will be of interest to see how it is received in France where the question of population is at the present time an important one, and such a check on marriage and the consequent legitimate multiplication of citizens is hardly in the line of the reforms for which French economists are mostly concerned. It is for quantity rather than quality of population that they appear to be now most anxious, and the demands of modern European militarism will have to be first considered. Even were such plans perfectly satisfactory and practicable it is doubtful whether they could be adequately carried out so as to yield results that will show their utility, and this is true of the comparatively well considered proposition of the French alienist as well as of the cruder attempts of the Texas and Connecticut legislators. It is a question as open to differences of opinion as are any of the economic questions of the day, and it is hard to say whether after all a *laissez faire* policy is not the best. The prohibition of the marriage of idiots, imbeciles, and the actual or periodic insane may be a legitimate and practicable method of preventing the propagation of degeneracy, and the same may be said of the legal prohibition of consanguineous marriages, though this is to some yet an open question; but any such wholesale enactments as those proposed are questionable. Degeneracy is largely an incident of evolution, at least in some of its details, and according to the law of natural selection so far as it applies to men, carries with it its own cure. It is a direct result of human progress, a necessary concomitant of our civilization, and the increase of insanity and other evils just now so prominent and alarming are only incidents in the general line of human advance. They are partly, at least, only signs of the higher standards of philanthropy that now prevail, as compared with those of former periods, and the better statistical information of the present day. As yet our information as to the causes of human defectiveness is incomplete, and we do not know that it would greatly add to the sum of human happiness to interfere very radically with the ordinary course of events in these respects.

We will have, however, to expect more propositions of this kind in the future, as an inevitable result of the diffusion of information or misinformation on scientific or pseudo-scientific subjects, which always has as one of its first effects the starting up of reformers. But while we are unable to legally suppress sexual immorality the possible danger of such reforms is that they would only increase the number of illegiti-

mate degenerates. The only real safeguards against the propagation of degenerates are to be looked for in the higher moral education of the public, and the cultivation of higher practical moral standards.

RAILROAD RATES TO THE JUBILEE MEETING.

Advices have been received from the Traffic Association of a uniform rate of a fare and one-third for railways in the territory east of the Missouri River and west of Chicago, Peoria and St. Louis, on the certificate plan. This includes:

Atchison, Topeka & Santa Fe Railway; Burlington, Cedar Rapids & Northern Railway; Chicago & Alton Railroad; Chicago & Northwestern Railway; Chicago, Burlington & Northern Railroad; Chicago, Burlington & Quincy; Chicago Great Western Railway; Chicago, Milwaukee & St. Paul Railway; Chicago, Rock Island & Pacific Railway; Chicago, St. Paul, Minneapolis & Omaha Railway; Hannibal & St. Joseph Railroad; Illinois Central Railroad; Iowa Central Railway; Jacksonville & St. Louis Railway; Minneapolis & St. Louis Railroad Co.; Missouri Pacific Railway; Rock Island & Peoria Railway; St. Louis & San Francisco Railroad; Sioux City & Pacific Railroad; Wabash Railroad; Wisconsin Central Lines.

CORRESPONDENCE.

Railroad Rates.

RANKIN, ILL., April 12, 1897.

To the Editor:—Will you please inform me what rates can be secured for physicians and their wives for transportation to attend the meeting of the AMERICAN MEDICAL ASSOCIATION in June and oblige? Yours truly, J. R. LYTLE, M.D.

ANSWER.—One and one-third fare from all points for the round trip.

ASSOCIATION NEWS.

Dinner of the Section of the Practice of Medicine.—The dinner of the Section of the Practice of Medicine of the AMERICAN MEDICAL ASSOCIATION will take place at 7 o'clock on the evening of June 1, 1897. Gentlemen desiring to attend this dinner will please send in their names at once to Dr. J. H. Musser, 1927 Chestnut street, Philadelphia, Chairman of the Section. The subscription will be $2.00 if one hundred attend, and $3.00 if less than one hundred attend, so that it will be necessary for the subscription list to be filled as early as possible.

Section on Surgery and Anatomy.—Preliminary program.

1. Address of the Chairman. Reginald H. Sayre, New York, N. Y.
2. *a*, Ligation of the Common Carotid Artery for Trifacial Neuralgia, with Experiments and Observations on Dogs; *b*, Specimens and Charts of the Arterial and Nervous Systems, illustrating the paper. B. Merrill Ricketts, Cincinnati, Ohio.
3. The Nerve Element in Surgical Pathology. J. McF. Gaston, Atlanta, Ga.
4. Operative Procedure for the relief of Occlusion of the Jaws. I. Ewing Mears, Philadelphia, Pa.
5. Improvement of Brain Function by Surgical Interference. Ernest La Place, Philadelphia, Pa.
6. Demonstration on the Cadaver of a new Surgical Engine. M. H. Cryer, Philadelphia, Pa.
7. Hernia of the Cecum. J. H. Gibbon, Philadelphia. Pa.
8. One of the Rarer Forms of Hernia. Frank Stahl, Chicago, Ill.
9. Two hundred and fifty Bassini Operations for the Cure of Hernia without Mortality. W. B. Degarmo, New York, N. Y.
10. The Sac in Inguinal Hernia. D. W. Graham, Chicago, Ill.
11. Animal Suture, Its Preparation and Technique of Application. H. O. Marcy, Boston, Mass.
12. The Diagnosis of Minor Personal Injuries and their Relation to Accident and Insurance Associations (with illustrations). L. H. Montgomery, Chicago, Ill.
13. Appendicitis in its Relation to Life Insurance. D. W. Graham, Chicago, Ill.
14. Report of a Case of Cyst of the Appendix with Presentation of Specimen. E. E. Montgomery, Philadelphia, Pa.
15. Surgical Managements of Appendicitis. Joseph Price, Philadelphia, Pa.
16. Pelvic Surgery. Mordecai Price, Philadelphia, Pa.
17. The Differential Diagnosis of Surgical Lesions in the Right Half of the Abdomen and Pelvis. George R. Fowler, Brooklyn, N. Y.
18. Anchoring the Kidney. R. Harvey Reed, Columbus, Ohio.
19. Calculi in the Ureter. Weller Van Hook, Chicago, Ill.
20. The Comparative Merits of Different Operations for Stone in the Bladder. J. B. Deaver, Philadelphia, Pa.
21. Suprapubic Cystotomy, with a Report of Fifty Cases. John A. Wyeth, New York, N. Y.
22. Photography of the Bladder. W. K. Otis, New York, N. Y.
23. A Hypospadias Operation. R. T. Morris, New York, N. Y.
24. Ligation of the Dorsal Vein of the Penis for the Cure of Functional Impotence. J. A. Murray, Clearfield, Pa.
25. The Dangers of Clap. F. C. Valentine, New York, N. Y.
26. Stone in the Common Duct. W. E. B. Davis, Birmingham, Ala.
27. Demonstration of Technique of the Roentgen Rays, with the Practical Application to Surgery. Illustrated by Stereopticon Views. A. W. Goodspeed, Philadelphia, Pa.
28. The Treatment of Ununited Fractures. Edward Martin, Philadelphia, Pa.
29. Ichthyosis Papillaris Linguæ, with Report of Case. Joseph Ransohoff, Cincinnati, Ohio.
30. Treatment of Abscess of the Lung. Carl Beck, New York, N. Y.
31. The Use of Dry Heat and a High Temperature for the Treatment of Chronic Joint Affections, with a Report of Cases. W. E. Wirt, Cleveland, Ohio.
32. Unnecessary Complications in Operative Surgery. John B. Roberts, Philadelphia, Pa.
33. The Present Status of the Injection Treatment of Hemorrhoids. L. H. Alder, Jr., Philadelphia, Pa.
34. Transperitoneal Ligation of the Iliac Artery, with Report of Cases. T. S. K. Morton, Philadelphia, Pa.
35. The Etiology and Classification of Tumors. S. H. Friend, Milwaukee, Wis.
36. Report of 200 Cases of Inoperable Sarcomata Treated by Injections of Mixed Toxins. W. B. Coley, New York, N. Y.
37. Serum Therapy in Acute Surgical Infectious Diseases. Howard Lilienthal, New York, N. Y.
38. Amputation in the Treatment of Malignant Disease. C. A. Wheaton, St. Paul, Minn.
39. The Technique of Pirogoff's Amputation. G. G. Davis, Philadelphia, Pa.
40. *a*, The Treatment of Colles Fracture; *b*, The Passing of Plaster. E. A. Tracy, Boston, Mass.
41. Morbus Coxarius, Exsection with Movable Joint; Case. J. B. Cokenover, Des Moines, Iowa.
42. Gangrene of the Foot due to Uterine Myoma. S. H. Weeks, Portland, Me.
43. Cicatricial Stenosis and Valve Formation as a Cause of Pyloric Obstruction, with Report of Five Cases Relieved by Operation. W. J. Mayo, Rochester, Minn.

SECTION DINNER, TUESDAY, JUNE 1; 7:30 P. M.

Price of tickets $3, without wine. Those desiring to attend the dinner who have not already notified the Chairman will please send their names to Dr. Reginald H. Sayre, 285 Fifth Avenue, New York, N. Y.

Section on Obstetrics and Diseases of Women.—Preliminary program:

1. Address of Chairman. Milo B. Ward, Topeka, Kans.
2. A Consideration of Some of the Conditions Influencing the Results of the Surgical Treatment of Uterine Retroposition. Augustus P. Clarke, Cambridge, Mass.
3. Pathological and Surgical Complication in Abdominal and Pelvic Disease Requiring Supra-pubic Sections for their Removal. Joseph Price, Philadelphia, Pa.
4. The Technique of Vaginal Section, Exclusive or Hysterectomy, for Diseased Appendages and Small Pelvic Tumors. Augustin Goelet, New York City.

5. The Choice of Methods in the Operative Treatment of Fibroid Tumors of the Uterus. L. S. McMurtry, Louisville, Ky.

6. The Element of Diagnosis in Intra-Uterine Growths. Thomas B. Manley, New York City.

7. Hemato-salpinx with Congenital Uterine Atresia, Alex. Hugh Ferguson, Chicago, Ill.

8. The Treatment of Puerperal Sepsis. E. E. Montgomery, Philadelphia, Pa.

9. Tapping and Drainage of Tubal Abscess Instead of Removal of Same. J. W. Heddens, St. Joseph, Mo.

10. Obstetric Delivery by Abdominal Section. W. G. MacDonald, Albany, N. Y.

11. The Destiny of Vaginal Hysterectomy for Malignant Disease. Lester C. Hall, Kansas City, Mo.

12. The Treatment of Circumscribed Pelvic Hemorrhage. M. Rassenwasser, Cleveland, Ohio.

13. Rational Gynecology. J. H. Kellogg, Battle Creek, Mich.

14. Closure of the Abdominal Incision. Philander A. Harris, Paterson, N. J.

15. The Closure of Wounds of the Bladder by the Use of the Buried Tendon Suture; with Special Reference to a New Method for the Cure of Difficult Cases of Vesico-vaginal Fistula. Henry O. Marcy, Boston, Mass.

16. The Broad Coaptation Suture in the Radical Operation for Umbilical Hernia. G. M. Edebohls, New York City.

17. The Midwife Question in America. C. S. Bacon, Chicago, Ill.

18. Vaginal Puncture in Extra-Uterine Pregnancy, Lewis Schooler, Des Moines, Iowa.

19. Some Interesting Cases in Gynecological Practice. Henry P. Newman, Chicago, Ill.

20. New Advances in the Treatment of Fibroid Uteri. Howard A. Kelly, Baltimore, Md.

21. Puerperal Infection, J. E. Cowles. Los Angeles, Cal.

22. Technique of Abdominal Hysterectomy. J. F. Baldwin, Columbus, Ohio.

23. Treatment of Retroversion of the Uterus. Franklin H. Martin, Chicago, Ill.

24. A Method for the Radical Cure of Gonorrheal Salpingitis. Robert T. Morris, New York City.

25. Relative Merits of the Cæsarean and Porro's Operations. J. H. Carstens, Detroit, Mich.

26. Treatment of Pelvic Inflammations by Vaginal Incision. W. E. B. Davis, Birmingham, Ala.

27. The Anal Sphincter in Pelvic Surgery. Joseph Eastman, Indianapolis, Ind.

28. Some Methods of Suspending the Uterus. George H. Noble, Atlanta, Ga.

29. Fibroid Tumors of the Vagina with Report of a Case. J. M. Emmert, Atlantic, Iowa.

30. Is Gynecology a Narrow Specialty? Thomas Opie, Baltimore, Md.

31. Tubercular Peritonitis Surgically Considered. J. W. Felty, Abilene, Kans.

32. Electricity in the Treatment of Fibroid Tumors; its Ultimate Results and Comparative Value. G. Betton Massey, Philadelphia, Pa.

33. Toxicity of Urine in Pregnancy. Robert W. Stewart, Cincinnati, Ohio.

34. Studies in Gynecology from the Service of the Woman's Hospital of Philadelphia. Anna M. Fullerton, Philadelphia, Pa.

35. Some Reflex Disturbances Due to Pelvic Disease, with Report of Cases. J. M. Duff, Pittsburg, Pa.

36. The Conditions and Accidents of Curettage. W. W. Grant, Denver, Col.

37. How to Avoid Drainage in Pelvic Surgery. I. S. Stone, Washington, D. C.

38. Vagino-abdominal Section. Thomas H. Hawkins, Denver, Col.

39. The non-operative Treatment of Puerperal infections. Joseph B. De Lee, Chicago, Ill.

40. A Report of Three Cases of Ovarian Cyst with Appendicitis Resembling Torsion of Pedicle. X. O. Werder, Pittsburg, Pa.

41. Treatment of Pus Tubes and Pelvic Abscess per Vaginam. W. H. Wathen, Louisville, Ky.

42. A Synopsis of Plastic Surgery Now Practised. Joseph Price, Philadelphia, Pa.

43. One Hundred Cases of Atresia and Stenosis of Vagina in Labor with Thirteen Fatal Cases. J. J. E. Maher, New York City.

44. Which is the Preferable Operative Method of Holding the Uterus in Normal Position. C. C. Frederick, Buffalo, N. Y.

45. Anteflexion of the Uterus. Russell G. Floyd, Eureka Springs, Ark.

SECTION DINNER.

Through the advice of the executive committee of the Section on Obstetrics and Diseases of Women, the chairman has arranged with the manager of the Hotel Walton, to give a Section dinner, Tuesday, June 1st, at 8 P.M. The price to be $3 per plate; wines extra. In order to make this important feature of the ASSOCIATION a signal success, it will be necessary for each member of the Section who will be present, and desires to enjoy this social occasion, to signify his intention by promptly notifying the chairman, so that arrangements can be made to accommodate all. Please mail postal card to the undersigned as soon as you read this article, and state the number of plates for which you will be responsible. The dinner will be given in the Hotel Walton, and no member of the Section will be able to resist the pleasure when the time comes, but we must know how many will be present so that every detail may be previously arranged.

MILO B. WARD, Chairman.
707 Kansas Avenue, Topeka, Kan.

Section on Neurology and Medical Jurisprudence.—Members will please send in the titles of their papers to the Secretary of the Section promptly, that the permanent program may be arranged. The following is the preliminary announcement of papers already promised:

1. Aphasia. Charles K. Mills, Philadelphia. Discussion: F. X. Dercum, Hugh T. Patrick, William G. Spiller, Barney Sachs, J. J. Putnam and C. W. Burr.

2. French and Motor Aphasia in a Polyglot. Frederick Peterson, New York City.

3. Some States of Disturbed Consciousness. J. T. Eskridge, Denver, Colo.

4. The Status of the Present Treatment of Alcoholism. J. K. Bauduy, St. Louis.

5. Meningo-myelitis with Special Reference to the Tubercular Form. William G. Spiller, Philadelphia.

6. The Medico-legal Aspect of Choreic Insanities. C. C. Hersman, Pittsburg.

7. Expertism. S. V. Clevenger, Chicago.

8. The Differential Diagnosis between Cerebral Syphilis and General Paresis. Hugh T. Patrick, Chicago.

9. Trunk Anesthesia in Locomotor Ataxia. Charles W. Burr, Philadelphia.

10. Habit Spasms of Children. Samuel J. Fort, Ellicott City, Md.

11. The Rest Cure. Landon Carter Gray, New York City. Discussion: E. S. Pettyjohn, C. H. Hughes, Chas. K. Mills.

12. Treatment of Graves' Disease. Harold N. Moyer, Chicago. Discussion: A. A. Eshner, Philadelphia, and C. H. Hughes, St. Louis.

13. Melancholia and Its Treatment. W. S. Watson, Fishkill-on-Hudson, N. Y.

14. The Subconscious Mind. Clark Bell, Esq., New York City.

15. Internal Cerebral Meningitis Chronica. E. S. Pettyjohn, Alma, Mich.

16. Stigmata in Young American Degenerates. Eugene S. Talbot, Chicago, Ill.

17. Pain Traumatisms. Thos. H. Manley, New York.

18. A Synopsis of the Duestrow Case. L. Bremer, St. Louis.

19. Insanity and Pulmonary Consumption Among the Negro Population of the South Since the War. Thomas J. Mays, Philadelphia, Pa.

20. Inebriety and Tuberculosis as Allied Diseases. T. D. Crothers, Hartford, Conn.

21. Alcohol as a Causative Factor in Disease of the Central Nervous System. T. D. Crothers, Hartford, Conn.

22. On the Pathogenesis of Locomotor Ataxia. L. Harrison Mettler, Chicago, Ill.

23. The Use and Abuse of Electricity in the Treatment of the so-called Neuroses. L. Harrison Mettler, Chicago, Ill.

24. A Study of the Symptomatology of Neurasthenia in Women. Louis F. Bishop, New York City.

25. Clinical Evidences of Neurasthenia as an Abdominal Neurosis. G. Betton Massey, Philadelphia, Pa.

26. Hereditary Lateral Sclerosis. Augustus A. Eshner, Philadelphia, Pa.

27. History of the Section on Neurology and Medical Jurisprudence. J. G. Kiernan, Chicago, Ill.

28. Chairman's Address. W. J. Herdman, Ann Arbor, Mich.

29. History of American Neurology. C. H. Hughes, St. Louis.

30. Remarks on the Curability of Insanity. John Punton, Kansas City, Mo.

31. Bilateral Psychomotor Myo-synchrony. C. H. Hughes, St. Louis, Mo.

32. Rest and Northern Lake Air for Neurotics. E. S. Pettyjohn, Alma, Mich.

Papers have also been promised by the following: F. X. Dercum, Philadelphia; Henry W. Coe, Portland, Ore.; John K. Mitchell, Philadelphia, Pa.; A. O. J. Kelly, Philadelphia, Pa.

SECTION DINNER.

The Section on Neurology and Medical Jurisprudence will give a dinner on the evening of the first day. The price of tickets is three dollars per plate. Members of the Association wishing to attend will please sign the accompanying slip and mail it at once to the Secretary of the Section, Dr. C. H. Hughes, 3857 Olive Street, St. Louis, Mo., that proper arrangements can be made in accordance with the number to be present.

To the Secretary, Neurological Section, A. M. A. *Sir:*—I wish . . plate placed for me at the dinner of the Section on Neurology and Medical Jurisprudence of the American Medical Association at Philadelphia, June 1, proximo.

Signed . . . . . .

Address . . . . . .

C. H. HUGHES, Secretary.

Section on Dental and Oral Surgery.—Preliminary program:

1. Chairman's Address. R. R. Andrews, Cambridge, Mass.
2. Resection and Reproduction of the Maxilla. G. Lenox Curtis, New York City, N. Y.
3. Sterilized Roots of Beast's Teeth as Supports for Porcelain Crowns. W. E. Walker, Pass Christian, Miss.
4. Tumors of the Maxilla. Wm. Knight, Cincinnati, Ohio.
5. The Influence of Diseased Teeth upon the Adjacent Structures. J. Taft, Cincinnati, Ohio.
6. Etiology and Treatment of Inflammation of the Anterior Pillars of the Fauces. George T. Carpenter, Chicago, Ill.
7. Pathologic Conditions of the Throat and Contiguous Structures During Early Childhood. Prince.
8. Factors in the Causation of Irregularities of the Maxilla and Teeth. Wm. A. Mills, Baltimore, Md.
9. Dental Faculties in Medical Schools. Richard Grady, Baltimore, Md.
10. The Need of Dental Instruction in Medical Schools. Edward Branigan, Boston, Mass.
11. A Series of Clinical Cases. Vida A. Latham, Chicago, Ill.
12. Hyperkinesis of the Muscles of Mastication a Symptom and an Etiologic Factor in Nervous Affections, Particularly Neuralgia of the Trigeminus and Diseases of the Jaws. G. V. I. Brown, Duluth, Minn.
13. The Relation of Dentistry to General Medicine. George F. Eames, Boston, Mass.
14. Cataphoresis, *i. e.*, The Use of Electricity Alone for the Obtunding Sensitive Dentine. W. A. G. Bonwill, Philadelphia.
15. Fraternity. A. C. McCurdy, Towson, Md.
16. Pyorrhea Alveolaris in Mercurial and Lead Poisoning and Scurvy. Paper No. 4. Eugene S. Talbot, Chicago, Ill.

R. R. ANDREWS, Chairman, Cambridge, Mass.

EUGENE S. TALBOT, Secretary, Chicago, Ill.

SOCIETY NEWS.

The French Congress of Alienists and Neurologists will be held in August at Toulouse. Questions to be discussed: Diagnosis of general paralysis; infantile hysteria; medical service in insane asylums.

International Medical Congress.—Germany has notified the Russian government that it will withdraw its representation unless all restrictions with regard to the passports of the Hebrew members of the German delegation are at once withdrawn. It is insisted that the Jewish members of the Congress shall receive from the Muscovite authorities identically the same treatment as their Christian colleagues.

International Congress of Forensic Medicine.—In connection with the Exposition at Brussels the local society announce an international medico-legal congress to meet August 2 to 7, to discuss the following questions: Internal factors in the putrefaction of cadavers; the medico-legal expert in cases of accidents caused by the ingestion of food; toxicology of acetylene; intoxication with carbonic oxid; the criminal insane; medical professional secrecy before the law; pulmonary docimasia; medico-legal significance of subserous ecchymoses; responsibility, especially partial responsibility; hypnotism in relation to criminality. For further particulars address Dr. Dewez, Mons, Belgium.

Atlantic City Academy of Medicine.—The active regular physicians of Atlantic City, N. J., met April 9, and organized a permanent organization to be known as the Atlantic City Academy of Medicine, the objects of which shall be to encourage interchange of opinion upon medical and surgical cases; to consider all subjects bearing upon the health and sanitation of our "City-by-the-Sea;" and to promote a greater spirit of sociability among the fraternity. There are three classes of members, viz., first, active members who must be regular, registered, and practicing physicians in Atlantic City; second, contributing members, who must be legally qualified regular practitioners, druggists or dentists; third, honorary members, regular physicians or professors who have attained high honors in the profession or who have especially contributed to the valuable literature of the profession. The Academy was organized with a membership of twenty and will hold its regular meetings the second Friday of each month, with the exception of July and August, at 9 P.M. The following officers were elected to serve until January, 1898: President, William M. Pollard; vice president, W. Blair Stewart; secretary, E. C. Chew; corresponding secretary, Joseph F. Edwards; treasurer, Walter Reynolds. Board of governors, the president, Boardman Reed and E. A. Reiley.

BOOK NOTICE.

Retinoscopy (or Shadow-test) in the Determination of Refraction at One Meter Distance with a Plane Mirror. By JAMES THORINGTON, M.D.. Adjunct Professor of Diseases of the Eye in the Philadelphia Polyclinic and College for Graduates in Medicine, etc. Sixty-six pages and 24 illustrations. Price $1.00. Philadelphia: P. Blakiston, Son & Co., 1012 Walnut St., 1897.

The author of this well written little book has very satisfactorily described the most approved methods of retinoscopy. The work is especially valuable in that for a great part it details the results of personal investigation of such a well known authority on this subject as Dr. Thorington. Oculists accustomed to casually use retinoscopy as practiced in the old way with the concave mirror or with the ophthalmoscopic mirror, will be surprised to note the marked evolution of the modus operandi of this test as developed by Drs. Jackson and Thorington. With perfected instruments and strict attention to arrangement of light, distance, and other details, a surprising degree of proficiency and accuracy is possible. Any one pursuing the modern methods of retinoscopy will soon be convinced of its superiority over all other objective tests, and every worker in ophthalmology realizes the necessity of at least one reliable objective method of refraction.

Dr. Thorington has described in the plainest manner every important detail of the test, and has lucidly illustrated his text with diagrams and photographs (several of original instruments). His book will prove a welcome and useful addition to ophthalmologic literature. We are pleased to note the preference given to the term retinoscopy. The test is best known by this name, and since the publicity of the X rays, its common synonym skiascopy is liable to be confused with skiagraphy; besides skiascopy and the shadow-test are inappropriate terms, as it is the movement of the illumination rather than the shadow that is studied in the modern method with the plane mirror. We are somewhat surprised at the statement that satisfactory refraction without a cycloplegic "*can* be quickly and accurately obtained" by retinoscopy, in cases of myopia and mixed astigmatism in which the pupil is large, but we are glad to read that the author does not advise this as a routine procedure.

PUBLIC HEALTH.

The Utilization of Garbage.—New York city contracted last June with the New York Sanitary Utilization Company on a five year basis to receive the garbage delivered to it at Barren Island, the long established depot of animal cadavers. Brooklyn's garbage has the same destination. The garbage towed by the city's scows to the island is dumped into hoppers, from which it slides into the receiving tank, where it is cooked. The mass is then dropped into tanks and carried by elevator buckets to the presses which separate the grease and water. The grease, after partial purification, becomes a salable article to be made into soaps, lubricants, etc. The residue is changed into fertilizing products. Without the dead animal contingent it would be difficult to make the garbage contract pay on the terms which the city allows. New York's garbage averages 800 tons a day, Brooklyn's is not nearly as great. The latter city has a contract with another company. The aim of both these cities is to dispense with sea dumpings, which prove such a serious impediment to navigation, as well as menace to the health of the shore dwellers. After years of lethargy the metropolitan center bestirs itself with a commendable activity.

For International Measures Against Leprosy.—Max Joseph (*Berliner klinische Wochenschrift*), considering the danger to the State, advises prophylactic measures, consisting in the duty for physicians to report every case, isolation of the patients, and international regulation for their internation. (*Janus.*) Professor Neumann (*Wiener medicinischen Wochenschrift*)—as the increase of leprosy, which, according to him, propagates itself as well by heredity as by direct contact, has been undoubted in Europe during the last decades—thinks that international measures of protection are necessary. The measures recommended by him are the following: 1. Strong control over all the cases, by compelling the physicians to report each case coming to their knowledge. 2. Isolation of the lepers in special asylums, like those of Norway. 3. Interdiction of marriage between them, and separation of the inmates of the asylums according to sex. 4. Appointment of special professionally educated physicians in the asylums. The latter being so arranged that they are not only places of nursing for the sick, but also seminaries for the scientific study of leprosy. (*Janus.*)

Entitled to Certificate to Practice Medicine.—A peremptory writ of mandamus, to compel the State Board of Health of Missouri to issue a certificate authorising one Charles E. Johnston to practice medicine and surgery in that State, was granted by the supreme court of Missouri, Dec. 23, 1896, in the case of State v. Lutz. Johnston was graduated at the Physio Medical College of Indiana, located at Indianapolis, Ind., March 18, 1896, when he received a diploma, which he presented to the State Board of Health of Missouri, in July, with his application for a certificate to practice in the latter State. This was refused on the ground, it was stated, that the college issuing the diploma was not, in the judgment of the board, a "medical institution in good standing," within the meaning of the statute; the grounds of this conclusion being that the board had, prior to the presentation of the diploma, passed a resolution, and mailed a copy of same to each medical college in the United States, requiring them to furnish the board, on or before Jan. 1, 1896, a list of their respective matriculates and the basis of their matriculation, and that the Physio-Medical College had not complied with this order; and also upon the further ground, that, upon announcing its refusal to grant the certificate, the board stated to the applicant that it would permit him to be examined, and, if found qualified, grant him a certificate. The weight of evidence was to the effect that the notice referred to was not sent to the college until June 23, 1896, and Johnston having theretofore graduated, the supreme court says, that he was in no way affected by the failure of the college to comply with the rule in question. Moreover, as to the college being in good standing, the court says, was settled by the testimony of the president of the State Board of Health that he found its name of record in the list of colleges furnished by the Illinois State Board of Health, which he said was considered standard in the United States. Good standing, as used in the statute, the supreme court goes on to state, simply means good reputation, and must by proven in the same way. Had the certificate been refused upon the ground that the Physio-Medical College was not of good standing, as required by section 6872, of the Revised Statutes of Missouri of 1889, it was conceded that mandamus would not lie to compel the board to issue it, because that question is, under the statute, within the judgment and discretion of the board to determine. But it was refused upon entirely different grounds, which did not involve matters of discretion or of judgment. The board undertook to establish a rule of its own, by which such good standing should be shown; that is, by requiring all medical colleges to furnish to it a list of their respective matriculates and the basis of their matriculation. In this, the supreme court says that it went beyond the power conferred upon it by statute, from which it derives its origin, and by which its duties and authority are defined. While the members of the medical board are to be commended for their endeavors to elevate the standard of practitioners of medicine and surgery, in passing as a board upon the applications of such persons for certificates to practice their profession, and in prescribing rules and regulations to that end, the supreme court continues, they must keep within the limits of the statute creating it, and this they did not do in this instance. And as Johnston had a diploma from a medical college in good standing, the court holds, he was under no obligations to submit to an examination by the board, nor had it any authority to require him to do so, as a prerequisite to granting him a certificate to practice medicine in Missouri. Mr. Justice Barclay raises the only dissenting voice, and that only to the extent of suggesting that, as the validity of the rule of the board had not been called in question by Johnston, it seemed to him preferable not to express an opinion upon it.

An International Sanitary Code.—The Fourth International Sanitary Conference, held at Venice, after a session of five weeks, adjourned on March 19. Sixteen of the European powers concurred in the findings, which together with the conclusions arrived at by the Conferences of 1892, 1893 and 1894, held respectively at Venice, Dresden and Paris, will furnish the nucleus of a code for all civilized nations. The *Lancet*, March 29, states that while the action taken has not been officially promulgated, there has enough transpired to show that British sanitary ideas have triumphed. One British idea is to interfere in the least possible degree with commerce and thus discard the "antiquated" forms of quarantine detention. "It is altogether probable that the very eccentricities of sanitary administration which in a moment of panic were resorted to have had the effect of causing a marked change of opinion among some of the leading authorities of Europe in favor of the methods which have so long been adopted in England; some of these authorities have not failed to contrast the perfect quietude with which this country recently met not only an importation of a few cases of plague, but almost simultaneously the arrival of a batch of cholera cases at one of our southern ports, with the panic which was manifested in the Mediterranean—not because disease had been imported, but merely because it was thought such a thing might occur. It is, perhaps, due to this more than anything else that sound progress has been made in Venice, and as typical of this progress we may mention the fact that shipping from British India will no longer be detained at Suez merely on the chance that someone on board may sicken of plague, but will be at once allowed to

pass the canal under the care of guards, provided there is no plague on board. This in itself is a gain of the first magnitude, for the detention of ships at Suez, merely because that place is, as it has been termed, the neck of the bottle by which disease can be prevented from passing from the East into Europe, is a hinderence to British commerce and navigation of a serious character, and one which long years of experience have shown to be quite useless. India has been styled 'the home of cholera'; plague has, alas, been epidemic in Bombay for several months. But during all these years and months British shipping which passes from India to our ports in one unceasing line has always failed to convey disease to our populations, and this experience is at last telling on other nations beside ourselves. The protests which have been made by the leading medical advisers of the French Government, for example against the attitude of Marseilles, have been proved to be right. Marseilles is the main sufferer, for the shipping and merchandise which would otherwise have gone to that port have gone elsewhere and some of the inhabitants are now crying out for government support of those who have deprived themselves and their unhappy families of their means of existence. Another point of importance that has been gained at Venice relates to merchandise. No country is required to prohibit the importation of any article of merchandise, and yet the failure to impose such prohibition is in no way to bring about restrictions against any such country by reason of its free admission of merchandise. Before the Conference met we heard that nearly every conceivable article might convey the infection of plague and was therefore to be avoided. Thus corn, rice, cotton, skins, Eastern carpets and numberless other things were looked upon with suspicion and even with fear; but the Conference has not supported this view, and the result is that, while freedom of action within certain limits is allowed to each of the contracting governments, every one of the articles which had been regarded as dangerous may, under the Convention, be admitted into any country at the will of the country concerned. The governments which prefer to subject certain articles to disinfection before receiving them are free to do so; but in former Conventions there has always been a list of merchandise, produce, etc., which was either altogether prohibited or which could only be admitted after disinfection."

NECROLOGY.

CARL EISENLOHR, M.D., Hamburg, eminent neuropathologist and anatomist; author of "Spinal lesions in pernicious anemia"; "Pathologic anatomy of central paralysis of the larynx"; "Simulation of tabes by specific chronic meningitic affections of the spinal cord," etc. In the study of the pathologic anatomy of athetosis, he found in a case of congenital athetosis that there was no diffuse lesion of the cortex, no bilateral focus, no miliary encephalitis, but a chronic myelitis of the central gray matter with the bordering regions of the lateral columns and of certain zones of the posterior columns, which he asserts is the anatomic foundation of the disease. In another monograph he called attention to the peculiar forms of neuritis characterized by eruptions of herpes zoster and the development of circumscribed perineuritic swellings. A study of the physiologic importance of the thalami optici and of their significance to the mimic functions, in 1890, was followed by a most comprehensive study of aphasia in which he added much to our knowledge of the localization of different forms of aphasia. The *Mitt. a. d. Hamburg. St.*, February, contains a detailed review of his works and an eulogy of his character. He died at the Madeiras of tuberculosis, in his 51st year.

CHARLES HAMMER, M.D., of Schenectady, N. Y., aged 65. He was born at Goslar in the duchy of Brunswick, Germany, Jan. 25, 1832, and was descended from a family whose origin dates from the twelfth century and whose members were university men for generations. He served as volunteer in 1848 and was afterward exempted from military duty in Germany. He studied at Heidelberg University in 1852 and Goettingen in 1854. He then came to this country and lived for a time at Philadelphia, and for several years kept a drug store at Uniontown, Ala. He traveled extensively during the ten years prior to the civil war and spent a year in South America. At the outbreak of the war he was commissioned as surgeon of the First California Cavalry, with the rank of major, but did not see active service. He went to Schenectady in 1867 and has resided there ever since. He was a member of the Schenectady County Medical Society and the AMERICAN MEDICAL ASSOCIATION.

LEVERETT SILLIMAN KELSY, M.D., died at Mount Vernon, Ohio, April 9. He was born Sept. 4, 1854; was graduated at the Medical College of Ohio, 1879; was resident physician of the Hospital of the Good Samaritan until March, 1880. In 1882 he took a degree at the Bellevue Hospital Medical College, New York. Subsequently practiced medicine for fifteen years with great success at Richmond, Ind. He was loved by his friends, honored by his associates and respected by his profession. F. C. L.

CHARLES R. WILEY, M.D., Jefferson Medical College, 1864, of Vineland, N. J., died of pneumonia April 2, aged about 53 years.

MISCELLANY.

Instance of Longevity.—"Uncle Josie" Field died April 1 in Middletown township, two miles from Red Bank, N. J. One of the incidents in his life was that he did not marry until he was 75 years of age, his wife being fifty years his junior. The couple had three children, who are still living. Mrs. Field is dead. Contrary to the theory that poverty is conducive to longevity he left considerable money and a farm of 4,000 acres.

A Cosmetic of Course.—The following is going the rounds of the secular press: "The oldest medical recipe is said by a French medical journal to be that of a hair tonic for an Egyptian queen. It is dated 400 B. C., and directs that dogs' paws and asses' hoofs be boiled with dates in oil." Perhaps it were well to investigate the chronology.

Medical Badges.—Russian doctors are hereafter to wear as a sign that they are legally qualified to practice, a little *zuak* or badge, a silver oval plate an inch and a half long by an inch wide, on which is a design of two intertwined serpents. The object is to increase the safety of the wearer in the less civilized parts of the country. This is according to the *N. Y. Sun*, and "must be so." Chicago physicians have had similar badges for about one year.

Urano-staphylorrhaphy.—Le Dentu reports 46 observations of congenital or cleft palate operated, and remarks that success is certain unless the chasm is of extraordinary width; 36 operations resulted in 31 complete successes, 3 satisfactory and 2 failures (acquired). In 11 cases of fistulas and acquired clefts, 8 were completely cured, 1 partially, and 2 proved unsuccessful. In each case of congenital cleft palate without complications, success was complete. He was also successful in all but 2 of 15 cases of congenital cleft palate with simple or double hare lip. In these 2 a slight communication persisted between the mouth and the nasal fossæ. He followed Trélat's instructions, with a special needle and scraper of his own design, and completed the operation at one sitting.—*Bulletin de l'Académie de Méd.*, March 9.

The Bubonic Plague in Literature.—"Chambers Encyclopedia," London, 1881, under the caption of "Black Death," beside mentioning Hecker's "Epidemics of the Middle Ages," refers to the "Decameron" of Boccaccio for a description of the

plague at Florence, "which for vividness and particularity of observation, almost equals Thucydides' account of the plague at Athens." In Bulwer's "Rienzi" an account of the plague will also be found. There seems to be no confusion of opinion regarding identities, but the meager resources of what little scientific language which abounded during the fourteenth century furnish appalling corroborations though really in a much mitigated form; to which may be added DeFoe's history of the London plague.

Effect of Fats on the Gastric Secretion.—Lobassow announces as the result of extensive experimentation with dogs, etc., that fat or grease coats the secreting surface of the stomach and diminishes the secreting power, and that it also coats the food taken into it and prevents the specific excitation of the mucosa, which normally favors secretion. He further states that this action of fat is not direct, but is due to a peculiar depressing influence exerted by the fats on the central nervous system. Aside from its theoretic interest, these conclusions may be found of practical value in controlling hypersecretion of the gastric juice by the administration of fats. Damaskin's experiments have confirmed Dolinski's assertion that fats stimulate the secretion of the pancreatic secretions.—*Ann. de la Soc. Méd.-Chir. de Liège*, February from *Wratsch*.

A Chilly Day for Willie.—The Reverend Dean Hole of Rochester, England, in his little book "A Little Town in America," says that he picked up the following bit of poesy in Cincinnati:

Little Willie from his mirror
Sucked the mercury all off,
Thinking, in his childish error,
It would cure his whooping-cough.
At the funeral Willie's mother
Smartly said to Mrs. Brown,
"'Twas a chilly day for William
When the mercury went down."

Medico-legal Expert sued for Damages.—A woman was arrested March 18, 1896, on the accusation of infanticide. She was examined the 20th by Dr. Meloche in prison, who asserted that she presented every indication of a recent confinement. The day afterward she was delivered of a stillborn child. She instituted proceedings against the medical expert, and he has been condemned by the civil tribunal to pay her 1,000 francs damages, notwithstanding the contrary decision of the *ministère public.—Progrès Méd.*, March 6.

Action of Antitoxins.—Ehrlich has been experimenting to decide the question of the modus operandi of the antitoxins, whether they act by neutralizing directly the toxins or by stimulating the cells of the organism to action. He used for the purpose a vegetable toxalbumin, ricin, which possesses the property of producing, even in small amounts, coagulation of the blood. He found that antiricin—the serum of animals immunized against the effects of the ricin—possesses the power to suspend the coagulating property of the ricin *in vitro*. This result favors the theory that the antitoxins neutralize the toxins by direct chemic action.—*Therap. Woch.*, March 7, from *Fortsch. der M.*, January 15.

Cases of Carcinoma Under 20.—A writer in the *Mittheilungen aus der Hamburg. Staatskrankenanstalten*, the new periodical designed to supplement the year-book published by the Hamburg institutions, has been collecting the reports of carcinoma occurring under 20, as four of such cases had come under his observation, and finds the figures as follows:

	Carcinoma.	Under 20.
Gürlt's Statistics	4,769	10
Glasser: Erlangen University Statistics	527	1
Winiwarter: Billroth's Vienna Clinic	548	2
Fischer, Zurich	119	
Gusserow, Hough, Blau, Dittrich, Schröder: Carcinoma uteri	3,419	2
Hamburg Neues Allg. Hospital	524	4
Total	9,906	19

Cardiac Tracings in Basedow's Disease.—C. Ferrari has been studying the peculiar exaggeration and acceleration of the dicrotic wave in nearly all of the cardiograms taken in this disease, which he ascribes to a modification in the nature of the cardiac contraction. The curve of the cardiac tetanus in Basedow's disease is not like that of the normal heart, which implies that the nerve impulses transmitted to the heart differ in some way from the normal, as in cases of stimulation of the pneumogastric. But there is also some special factor in the contraction of the myocardium in this disease; not only the rhythm but the form of the cardiac contraction is altered; instead of one single tetanic contraction in which the single beats succeed each other with an interval rather longer than usual, the second impulse follows so rapidly upon the first, that it seems to start even before the first has reached its extreme elevation. In his opinion this fact constitutes the significance of the cardiograms in this disease, and he asserts that we are not justified in assuming from the resemblance between these curves and those produced by stimulation of the pneumogastric, that the peculiarities are caused by modifications in the nervous mechanism. Too many important facts are arrayed against this assumption, among them the familiar fact that stimulating the pneumogastric *retards* the action of the heart.—*Gaz. degli Osp. e delle Clin.*, February 28.

Damage Suit for Syphilis Contagion.—Much adverse discussion has been caused by a recent judicial decision in France. An apparently healthy child was given to a healthy woman to nurse. In a few weeks the child developed hereditary syphilis, and the nurse contracted it, also her husband and child, with severe manifestations of the disease. She sued the parents for damages, but as neither of the parents showed the slightest trace of syphilitic lesions, past or present, no criminality could be fastened upon them and the plaintiff's claim for damages was refused. The case aroused much interest as the child of the nurse died and she committed suicide. The question has been raised whether nurses in future may not be tempted to sue the physician who countenances the introduction of such a child into their families. It behooves all to exercise extreme caution in such cases, and to refrain from countenancing them in any way when there is the slightest reason to fear possible syphilitic complications.

Amount of Iodin in Various Organs.—We notice the following table in an article on the various organ-preparations in the market (*Pharm. Ztng.*, No. 15, 1897).

Organ.	Average Weight.	Percentage of Iodin in organ.	Amount of Iodin in organ in grms.	Iodin soluble in physiologic salt solution.	Proportion of soluble Iodin to total Iodin.
Thyroid Gland	10 grms	0.04	0.004	0.04	1:1
Spleen	1 kgm. to 5 kgm.	0.00152 to 0.00203	0.015—0.020 to 0.0225—0.030	0.00152 to 0.00203	1:1
Pig's ovary	5 grms	0.000648	0.0000324	0.0002413	5:13
Cow's ovary	10 grms	0.000609	0.0000609	0.0000381	1:16
Suprarenal capsules	10 grms	0.0003048	0.00003048	0.0003048	1:1

—*Nouv. Remèdes*, March 8.

Death from Apoplexy Not Covered by Accident Policy.—An "accident policy" of insurance covenanted for the payment of an indemnity if death resulted from injuries through "external, violent and accidental means alone, independently of all other causes," and expressly stipulated that it should "not cover injuries of which there is no visible mark, nor death resulting wholly or partly, directly or indirectly, from disease or bodily infirmity." Death resulted from apoplexy, an attack of which followed certain work that required stooping and a run up a little hill. Under these circumstances, the United States

court of appeals holds, Travelers' Insurance Co. v. Selden, Feb. 2, 1897, that the case should have been taken from the jury and a verdict for the insurance company directed. It says that the sense in which the word "accident" was used in the policy, as shown by the context, and as expounded in similar cases, was as meaning "an event which proceeds from an unknown cause or as an unusual effect of a known cause, and therefore unexpected," something casual and fortuitous. Where an event occurs which can be readily explained as an operation of nature, working through natural, usual and ordinary laws, that, it declares, can not be called an accident. Consequently, the death in question must be attributed to disease, and not to "accident."

Leprosy Bacillus.—The presence of the lepra bacillus was reported in the medulla of a man 46 years old, who died of syringomyelia (Royal Bacteriological Institute, Lisbon, Dr. Camara Pestana and Dr. A. Beltencourt). At the necropsy there was found a gliomatous new formation of the medulla, which extended from the bulbous to the middle of the dorsal part, and showed strongest development in the neck region. The medulla was here strongly swollen, and presented a central cavity while the nerve substance was reduced to a thin bundle, formed mostly by degenerated anterior columns. In the substance which coated the medullary cavity inside, the authors found bacilli, which colored with carbol fuchsin, according to Ziehl, and also with aqueous fuchsin solution at 30 to 60 degrees, according to Gram, and which inoculated into the peritoneum of a guinea pig, produced no tuberculosis, and were, according to the opinion of the authors, undoubtedly lepra bacilli. We do not think, says Scheube in his review in *Janus*, this *one* essay at transmission to decide the question, whether the case was leprosy or tuberculosis, sufficient; whether the bacilli were isolated or aggregated, whether they were found in or between the cells is not indicated. In the nerves—the nerves examined were medianus and radiatus—no bacilli were found.

Restoration of the Vagina, Bladder, Urethra and Rectum.—Péan recently performed a successful anaplastic operation to relieve a woman who at her first confinement, age 28, had such a difficult delivery, the fetal head resting on the perineum four days, that part of the perineum and the recto-vaginal and vesico-vaginal septa were completely torn away. The urine, fecal matters and menstrual flow all issued uncontrolled from the cavern thus formed. The various steps of the operation are described with 10 cuts in the *Bulletin de l' Académie de Méd.* of March 9. The patient is now able to control her functions and lead a normal existence once more, although the menstrual flow issues through the same orifice as the urine. In case this produces trouble later, removal of the uterus and ovaries will put an end to the menstruation, as has been done in certain cases of vesico-vaginal fistulas.

Practical Radiography in Esophageal Surgery.—Péan, the Parisian surgeon, reports an interesting case in which the X rays were employed with great advantage to determine the exact position of a coin swallowed by a child. The following are the conclusions of Péan: 1. Foreign bodies up to 15 millimeters in diameter can be swallowed by infants with great facility. 2. Such bodies are generally arrested in the narrow part of the esophagus, of which the caliber in the adult does not exceed three-quarters of an inch, while in early life it is considerably less. 3. The difficulty of diagnosing the exact site of the foreign body is often very great, especially when the child can swallow liquids and does not complain of pain. 4. Radiography not only assists the surgeon by deciding the point as to whether the body has been swallowed or not, but also indicates the exact spot where it has lodged, and thus indicating where to operate. 5. Thanks to external manipulation, it is possible to cause a rounded and smooth object to travel from below upward, until it can be extracted by the mouth. This mode of procedure is incontestably preferable to extraction through an incision in the tube. When once the exact position of a lodged coin has been determined in the esophagus, massage, in conjunction with position, might in some cases suffice for its removal, without recourse to the knife being necessary.—*The Scalpel*, February.

The Mission of the Microbe.—The history of science shows that a fact soon formulates itself into the dignity of a discovery, which in turn yields the palm to an explanation with the usual interdependencies of cause and effect. How easily at one time was said, "Eliminate the microbe, cure the disease;" how readily was the boon clutched after until Roux and Yersin proved the presence of the diphtheria bacillus in normal throats and Metschnikoff found the cholera bacillus widely spread in water. Then perhaps it began to dawn bpon the intellect that Pythagoras once rushed naked from the bath to proclaim to the multitude an "eureka," which in his exhileration he doubtless exalted into a panacea. Afterward the world discovered that he had promulgated a mode without establishing a principle. Now a virulent condition is made to do duty for an aggressive rod and health boards have begun to lose faith in their transfered cultures. Next antitoxic methods are in vogue to give way in turn to other theories, for such are these attempts to solve the biologic mystery still to be termed. Of course it were easy to offer the consolation to balked hopes that after the manner of certain transcendental philosophers "spirits may be bad as well as good—probabilities are to determine." Verily the equilibrium is hardly to be maintained when a dual life is concerned, the more especially when there is brought into the controversy the experiments of the Hygienic Institute of the Berlin University, which seem to convince that animals may live without depending at all upon the gratitude of parasites. "We might spend months in speaking of the beneficent ways of the products" says Dr. E. A. de Schweinitz in a recent Presidential address before the Chemical Society of Washington, "but these germs are only waiting man's bidding to become valuable subjects and to show that as has been instanced in the history of nations, conquered people often make the best and wisest citizens." After all what is really proven is that complex man has only a wider and busier field for his own particular warfare.

Walcher's Position in Parturition.—M. E. Fothergill of Edinburgh, in the *British Medical Journal* of October 31, says that Walcher's position—the *Walchersche Hängelege*—was first described by Walcher in 1889 in a short article in the *Centralblatt für Gynecologie* (*Therapeutic Gazette*, February, 1897). By placing the parturient patient in the lithotomy posture, and then allowing the legs to hang freely down so that the feet do not touch the floor, the true conjugate is increased about one centimeter; this statement has been proved by numerous observers abroad, and the posture is now in use as a matter of routine in several German hospitals. It is employed in all high forceps operations, in extractions after turning, and after perforation of the head. Fothergill has found the posture extremely useful in several cases, which are briefly noted. In posing the patient, all that is necessary is to see that the buttocks are quite at the edge of the bed or table used, and high enough to allow of the feet hanging clear of the floor; pillows may be placed under the buttocks if the bed is low. There is a tendency to pull the patient off the bed; but she may be held by the anesthetist, or bands may be passed under the arms and fastened to the bed or table-legs so as to hold her in position. In this posture the axis of the pelvic brim presents downward at an angle of about 40 degrees; therefore, in order to exert traction in the proper direction with forceps, the operator must sit on a low stool, or on a cushion placed on the floor. In high forceps cases and after perforation, the position

saves, 1, the strength of the operator; 2, pressure on the head; 3, pressure on the symphysis; 4, pressure on the perineum by forceps. In cases of difficulty at the brim not needing forceps, and in breech cases, the position saves, 1, exertion to the uterus and abdominal muscles; 2, pressure on the head; 3, pressure on the pubic symphysis. In all cases, with or without forceps, where the perineum is in danger, extension of the legs at the hips is of advantage in relaxing the integument and subjacent structures at the vulvar orifice.

Inoculations of Erysipelas.—In order to determine the value of inoculations of erysipelas as a therapeutic measure in cases of carcinoma, Koch and Petruschky have been conducting a series of experiments, described in the *Ztschft. f. Hyg. u. Inf.*, Vol. 23, No. 3. Their conclusions are that the effect of the streptococcus varies very much with different persons. They found that streptococci, made very virulent by repeated passages through rabbits, has no effect on man, and that even human streptococci are not always efficient in producing erysipelas. Different kinds must be tried to ensure success. Erysipelas can be induced in man by cutaneous inoculation of streptococci derived from pure pus processes, such as peritonitis. The fact that one has had several light attacks of erysipelas does not confer immunity against further attacks; neither is it possible to induce positive immunity by previous treatment with anti-streptococcus serum. They conclude by stating that it is impossible to deny the therapeutic influence of several streptococcus infections on the course of a carcinoma, but that this is too slight in comparison with the consequent loss of vital strength, to allow us to cherish any hopes of securing the cure of carcinoma by this means.—*Cbl. f. Chir.*, March 6.

Radical Operation for Varicose Veins.—O'Conor (*Annals of Surgery*, April, 1897, p. 526) describes briefly the mode of procedure that he has followed during a year in the radical treatment of varicose veins. The limb having been shaved and disinfected from Poupart's ligament to the ankle, a two-inch incision is made over the saphenous opening and the internal saphenous trunk is doubly ligated and divided; if no varicosity is present above the knee, the wound is closed and dressed at once with iodoform gauze. If the femoral portion is affected, after ligation at the saphenous opening the vein is dissected up and its tributaries seized with pressure-forceps and ligated. In nearly all cases, if varices are present above the knee, there are also some below. Consequently the incision is prolonged downward directly over the vessel until the lowest limit of the disease is reached; the vein is then tied and divided below. In some cases an incision of eighteen or twenty inches is necessary. If the disease does not extend above the knee, after occluding the saphenous trunk in the manner described an incision is made over the affected portion, a ligature is applied above and below and the whole mass is removed by dissection. This maneuver, it is said, may be carried out with surprising ease and rapidity. All branches are caught up with pressure-forceps, and when the main channel is removed they are ligated. As frequently the external saphenous vein is also affected, its varicose portion is dealt with in a similar manner. While to one unaccustomed to an incision of eighteen or twenty inches this plan may seem formidable, it is pointed out that if the vessel is ligated above and below the varicose area there is not the slightest danger of embolism or pyemia, and the hemorrhage is insignificant. The method has also been employed in the removal of large thrombosed veins occurring in the first few months of pregnancy. Under these circumstances above all others it is particularly necessary, before manipulating the diseased portion, to occlude the main vein well above the seat of the disease, so that if thrombi are dislodged they can not pass into the general circulation. The time occupied in this procedure need not be greater than is required in other comparable operations. The wounds made heal just as kindly as do the short ones, and with ordinary surgical cleanliness there is nothing to be feared. The insertion of a strand of iodoform gauze as a drain to every four inches of wound is a useful precaution, for it does away with the risk of any collections of blood. No bad results were observed to follow the employment of this method, and the patients treated are grateful for the results.

A Dwarf Race in Central Asia.—Two Danish explorers, Olufsen and Philippsen, have recently returned from a tour in little known territory lying to the north of the Himalaya ranges, which forms a part of the so-called Pamir plateau. High up on this tableland they found a unique race of men. Not only are they fire-worshipers, but they are also much smaller than the average human being. Of civilization, as we understand the word, they have apparently no conception, being in all respects as primitive as the most savage tribe. Traces of fire-worship may be observed throughout the entire orient and even in civilized Europe. Bonfires are still lit on St. John's eve, and this old custom is said to be a relic of fire-worship. It seems that in this strange country the animals, as well as the human beings, are ludicrously small. Thus, the donkeys, which are used as beasts of burden, are scarcely larger than dogs, and the oxen are never larger than ordinary foals. Scientists claim that the climate has dwarfed the four-footed animals, as well as the human beings, but the majority, while admitting that a rigorous climate may stunt men and women, deny that it can have the same effect on quadrupeds, since nature carefully provides them with adequate armor, even in the worst climate. That these little men and women are entirely uncivilized is shown by the fact that they have no money and carry on all their business by means of barter. It is also evident that the ceremony of marriage plays a very small part in their life, for we are told that the price of a woman is fifteen sheep or five or six cows. From what other travelers tell us it seems clear that the territory inhabited by the dwarfs is very limited. The entire Pamir region is not of any great extent, and we know that for nine and a half months of the year the Alai district is uninhabited owing to the extreme severity of the weather. A sturdy race, too, these dwarfs can hardly be, for more than one authority tells us that the people on this plateau suffer greatly from chills and rheumatism, and also from scorbutic affections, which are the result of their meager diet. In St. Petersburg the travelers have received a hearty welcome, and the opinion is freely expressed that their discoveries will prove to be of unusual interest and importance. They have brought back with them from Asia many curious objects collected during their travels, and these will probably be placed on exhibition in Denmark.

Not Proper Evidence or form of Action Against Office Physician.—Because it is an unsafe practice, in the admission of testimony, to allow witnesses to speak as experts unless the court is well satisfied that they possess the requisite qualifications, especially as the effect of such testimony is most difficult to estimate, from the fact that undue importance not infrequently attaches to it, and gives to it an influence upon the minds of a jury to which it is not fairly or reasonably entitled, the court of appeals of Maryland says that the rule allowing expert evidence will, in its opinion, be less objectionable, and more conducive to justice, if it be somewhat restricted, rather than relaxed. Accordingly, in the malpractice case, entitled Dashiell V. Griffith, wherein one George R. Griffith and his wife had obtained a judgment, it holds, Dec. 3, 1896, that a woman who had nursed twenty or thirty cases of "bone fellon" where opening or lancing had been resorted to, was not thereby qualified to say as an expert "that, in her opinion, the finger was not cut half way to the bone," because the wound did not "lay open," and "when an incision is deep, it always lays open." And the court takes pains to state that it has seldom, be it said to the credit of the profession, been required to pass upon question of

medical malpractice. But it thinks that the people are generally agreed upon the proposition that the amount of care, skill, and diligence required is not the highest or greatest, but only such as is ordinarily exercised by others in the profession generally. It also thinks that when a physician is employed to attend upon a sick person, his employment, as well as the relation of physician and patient, continues, in the absence of a stipulation to the contrary, as long as attention is required; and the physician or surgeon must exercise reasonable care in determining when the attendance may be properly, and safely discontinued. The same principles of law control the right of recovery for malpractice whether he goes to the home of the patient to bestow such attention, or renders his services at his own office. But if an office patient fails to come to the office of the physician or surgeon whom he employs, and from whom he has received careful and skilful treatment, and then fails to return to the office for further treatment, and in consequence thereof suffers injury, the court suggests that he is not entitled to maintain an action against the physician, because it is his own default and misfeasance. It further holds that if the defendant had, in his treatment of Mrs. Griffith's finger prior to a certain date, exercised reasonable care, skill, and diligence, and then, because of the illness of his father, had turned his patient over to another physician, a competent one, for the further treatment of her finger, and the woman refused to go to the latter for treatment, then the liability of the defendant ceased, and the patient assumed to herself the consequences of any injury resulting from the neglect of her finger. Aside from this, the court holds that no recovery could be had of damages for the failure of the defendant to be present at his office on and after the date above referred to, because the complaint stopped with the single allegation of "actual misfeasance, negligence, and want of skill" in the treatment of the finger, and no such further cause of action was laid therein. It also holds that the husband and wife could not sue jointly when the cause of action was the mere non-performance of a duty imposed by the contract of employment, which would be solely in right of the husband. For these reasons, the court grants a new trial.

Health of the British Army.—As the yellow-covered report for 1895 of Director General J. Jameson, Army Medical Department, to the Right Honorable the Secretary of State for War, is not to be found on every bookshelf, the following notes may prove of interest as showing how our Army medical statistics and sanitary conditions compare with those of Britain. The British troops serving at home and abroad, not including colonial corps, numbered 200,000 men, one-half of whom were on duty in the United Kingdom and the other in India and the Colonies. The number of cases admitted to sick report among the troops at the home station was equivalent to 702.8 per thousand of the strength, giving a constant sick rate of 41.76, with a death rate of 4.32 and a discharge rate for disability of 16.57. These rates, although somewhat larger than those of the previous year, are under the average of the last ten years. The rates of the U. S. Army compare favorably with these. Our admission rate is larger, because our medical officers are required to report as sick all men who are excused by them from the performance of any part of their military duties; but our rate of constant sickness in 1895 was only 33.89. The average duration of each case among the British troops was 20.64 days as compared with 11.1 in the U. S. Army; and the number of days lost by each British soldier on account of sickness (injuries included) was 21.03 days as compared with 12.4 days among our troops. Enteric fever was reported as the cause of admission in 137 cases, 35 of which were fatal. This number of deaths occurring in a strength of 100,000 men can not be considered large in view of the typhoid death rates that prevail in most of the cities of the United States. Venereal diseases occasioned 173.8 admissions and a constant sickness of 15.28 per thousand of strength. The Channel Islands had the highest admission rate, 230.1; the garrison of Cork the lowest, 103.3. In this respect the United States soldier has a better record, for the admission rate was only 73.72 and the constant sickness only 5 per thousand men. Before discussing the medical statistics of the troops on foreign stations the report gives many interesting data concerning the 55,698 recruits examined in the United Kingdom during the year. In every thousand of these 411.43 were rejected as unfit, this rate being somewhat larger than that of the previous year. Deficient height, weight and chest measurement occasioned 191.66 rejections per thousand examined; defective vision 39.88; varicose veins and varicocele 28.13; heart disease 20.71 and hernia 6.68. Of the 32,782 found fit for service the ages varied from 18 to 25 years, very few being under or over these extremes. One-third of the whole number were between 18 and 19 years of age. In fact the average age was 19.4 years, the height 65.9 inches and the weight 125 pounds. The physique of the young recruits of the United States Army is greatly superior to this. During the year 3,286 native born whites between the ages of 20 and 25 (average 22) were enlisted, and the average height of these was 67.75 inches; weight 143.57 pounds.

The troops in Canada suffered less from sickness than any of the other commands serving abroad. Their rate of constant sickness was only 24.99, and the sick time to each soldier only 9.12 days. Speaking comparatively, the troops in Bermuda also had good rates: constant sickness 39.09 per thousand, with 14.27 days as the time lost through sickness by each soldier; but in all the other commands the rates were high. The rate of constant sickness in India was 93.61 with 14.31 dead, 12.01 discharged and 24.34 sent home as invalids out of every thousand men of the 68,331 serving with the flag in the Indian Empire. The highest admission rate, 2,844.9 per thousand, occurred in the Sind district, more than half of which was caused by malarial fevers. Of individual stations Karachi had the highest rate, 3,008.2, chiefly caused by malarial fevers and venereal diseases. The mortality was highest, 39.63 per thousand, at Barrackpore, nearly half of it due to dysentery. Enteric fever in India caused 322 deaths per 100,000 of strength, the percentage of mortality to attack being 24.8; but this rate of fatality is open to criticism when we find in a subsequent part of the report that 1,427 cases of simple continued fever, with 3 deaths, are recorded. The largest number of cases of enteric fever occurred at Lucknow, 128, with 35 deaths; and this notwithstanding the distribution of a new and pure water supply from the Lucknow waterworks. At Meerut, Umballa, Peshawar and several other stations where the prevalence of this fever was considerable, the benefit derived from boiling the water was by no means well defined. The medical officers in charge considered that the disease was contracted in the bazaars of the city, where ice creams and drinks of all sorts are sold and largely indulged in by the men. At several of the stations it was noted that no officer, married soldier, woman or child belonging to the garrison became affected, and it is remarked that had the milk or water supplies been infected, the women and children would have been among the first to suffer. Cholera touched the troops but slightly during the year, having caused only a total of 44 admissions and 32 deaths. Malarial diseases occasioned an admission rate of 342.2 per thousand, with 12.55 of constant sickness. Venereal diseases added 536.9 to the admission rate, or 127.6 more than the average. The constant sickness from this cause was 46.39, or considerably higher than the disability caused by all diseases and injuries in the army at the home stations. The highest admission rate was reported from Nowgong, 1,013.5; but Cawnpore furnished 967.6 and was followed by many others with rates nearly as high. "Lamentable as are the foregoing figures, they understate as regards secondary syphilis the amount of inefficiency due to that form of the disease, as in several stations

men were treated by hypodermic injections of mercury without admission to hospital." The disability due to injuries must be regarded as small, 99.7 cases with a death rate of 1.75 per thousand of strength. The sanitary condition of barracks and quarters appears from the report to have been excellent, and an occasional statement of primitive and unsatisfactory conditions serves merely to emphasize the excellence of the whole. Take, for instance, from the report on the Rangoon District: "At Meiktila the water is taken from a lake by means of water carts drawn by bullocks; these are driven into the lake, and it is said that the *bheesties* frequently wash themselves and their bullocks before filling the water carts." In one instance (at Jubbulpore), the sand for the Macnamara filter was found to have been obtained "from a *nullah* contaminated by human excreta and washings from neighboring villages." The recommendations concerning water supplies made in the report are: "That in all stations not supplied with pipe-water from reservoirs certain wells be set apart for drinking water, and be put into thorough repair and covered in and fitted with pumps and reservoirs from which the water be laid on to barracks in pipes. That wherever reservoirs exist, the greatest care be taken to prevent the pollution of the water in the reservoir and during its distribution. That the Macnamara filters be replaced by the Pasteur-Chamberland filters in all stations." Concerning enteric fever and cholera the recommendations are: "That all drinking water and milk be boiled during the prevalence of these diseases in any station, and that the latrines be freely and regularly disinfected. That all wells used for drinking be disinfected with permanganate of potash." The rate of constant sickness in Egypt was 63.13 per thousand, chiefly due to fevers and venereal diseases. The presence of cholera in the country caused the strictest supervision to be maintained, and a set of instructions for guidance as to general sanitary and hygienic measures was issued. Pasteur-Chamberland filters were provided for many of the garrisons. The troops in China had a constant sickness of 73.39 per thousand, nearly half of it occasioned by venereal diseases. Only five cases of enteric fever were reported from this command of over 1,500 men, although "the insanitary condition of Victoria and the abominable stenches in which it abounded probably lowered the standard of health, and if they did not actually cause, they at least predisposed to the occurrence of sickness. These stenches were in a great measure due to the absence of flushing of the drains and sewers, owing to the insufficiency of water—the rainfall for the year having been 35 inches below the average and 15 inches below the lowest recorded."

The Appendix to the Report contains a paper on the progress of hygiene during the year 1896, by the professor of sanitary hygiene at the Army Medical School, Surgeon-Colonel J. Lane Notter, with reports on cholera and enteric fever and a number of excellent papers on surgical cases. The most interesting paper, however, is probably Surgeon Major General W. Taylor's "Report on the Medical Transactions of the Ashanti Expeditionary Force," during the period from Dec. 14, 1895, to Feb. 7, 1896. A full account is given of the care exercised in the selection of the men, their clothing, food, water supplies and personal hygiene, and of the organization of the hospitals.

New York.

THE MANHATTAN STATE HOSPITAL FOR THE INSANE.—The damage done by the recent fire in the Manhattan State Hospital for the Insane, on Ward's Island, is greater than was at first estimated. The contemplated repairs will cost $100,000. The patients placed temporarily in other institutions will remain subject to further disposal.

THE CENTENNIAL OF THE WESTCHESTER COUNTY MEDICAL SOCIETY.—Dr H. Ernst Schmid, of White Plains, N. Y., is to deliver during the coming month an historical address before this society, which will reflect the methods of practice and the manners of the period. He is reputed to be a philosophic and exhaustive writer.

THE HOSPITAL FOR THE RUPTURED AND CRIPPLED in New York City, is to be enlarged. The present buildings at Lexington Avenue and 42d Street will be given up entirely for administration purposes. The exterior of the new structure will be of gray brick, with elevations of buff Indiana limestone. An architectural feature will be the semi-circular tower-like end at Lexington Avenue and 43d Street. About the only external ornamentation will be the scrollwork over the entrance doorway at Lexington Avenue and 43d Street. The main building will be five and a half stories in height. The end flanking Lexington Avenue, a single story in height, will be used for the dispensary. Around the south end of the dispensary, a driveway is to lead from Lexington Avenue into a spacious court for receiving supplies. In the basements will be large workshops and sewing rooms, together with many appliances to enable the inmates to engage in light occupation. On the top floor will be the operating theater, with its adjuncts of necessary rooms. A large kitchen has been centrally arranged for the easy distribution of food to all the buildings.

THE BELLEVUE HOSPITAL MEDICAL COLLEGE and the University Medical Department have concluded to join forces. When the former school lost its dissecting room by fire, a few weeks ago, the latter tendered the use of its accommodations to the students. Growing out of that courtesy, harmony and consolidation have resulted, and the sanction of the State Board of Regents has been obtained for the union, under the title of the "New York University-Bellevue Hospital Medical College." As the lease of the Bellevue College site on the hospital grounds has not long to run, the trustees of that institution have recently obtained by purchase a valuable plot of ground on the southwest corner of 26th Street and 1st Avenue, which will probably be utilized as the site for additional laboratory accommodations.

Detroit.

THE STATE BOARD OF HEALTH meets in Detroit some time this month.

DETROIT has been having an epidemic of measles for some time. In a great many cases the type of the disease is very severe, bronchial and pulmonary inflammations being the most grave. Some deaths have been reported.

AT THE DETROIT MEDICAL AND LIBRARY ASSOCIATION, Monday evening April 5, Dr. John Flinterman read a paper entitled, "Carcinoma of the Duodenum, with Report of a Case." The doctor presented a specimen of the case reported, which showed a carcinomatous involvement of the descending portion of the duodenum with metastasis of the liver. The valvulæ conniventes were not closed. The hepatic duct was greatly hypertrophied. The ductus communis choledochus was considerably enlarged further down. Upon microscopic examination the hepatic cells were found to be atrophied; the liver itself atrophied; the stomach quite small. The doctor in his report stated that the patient suffered greatly from jaundice, and that the symptoms were unusual for cancer of the duodenum, which led him to rather suspect primary cancer of the liver. The writer also took the stand that cases of cancer of the duodenum give the same symptoms as those with cancer of the pylorus. The case under discussion was an exception to the rule and the doctor thought that it was due to the non-obstruction in the duodenum. The speaker took up the statistics on the subject showing how rarely carcinomas appear in this region, giving the records of the large hospital in Vienna, the Institute des Wiener Allgemeinen Krankenhauses as proof, where, during the last twenty-four years, 343 cases of cancer of the intestines were reported, and out of this number only three were of the duodenum.

THE WAYNE COUNTY MEDICAL SOCIETY had a very interesting meeting Thursday evening, April 1. Dr. David Inglis on the subject of, "Some Practical Points in Therapeutics" gave some very good suggestions, of which the following are the most important: In treating cases of inflammatory croup which are not diphtheritic, the administration of quinin in comparatively large and frequent doses is indicated. To a child of 5 years, 2 grains every hour for three to five times may be given. Should the physician be called early in the day, say at 1 P.M., the exhibition of 2 grains every two hours until 7 o'clock, and then every hour for a few times, will almost certainly insure a good night's rest for the child as well as for the doctor. On the following day the dose of 2 grains every three or four hours will almost certainly complete the cure. A very good way to administer quinin is by inunction, the quinin having been rubbed up with lanolin. This latter has been found to assist

the absorption of the remedy better than any other oily preparation. The treatment of chorea by sulphonal has been found to result satisfactorily. The author of the paper prefers trional to sulphonal for its hypnotic effect, as it produces more natural sleep and is more readily soluble. Acetanilid is preferable to the bromids for the treatment of epilepsy, as it has the same power to control the convulsions without the undesirable mental effects which the bromids produce. As to the objections which some raise to all coal-tar preparations, that collapse, cyanosis and excessive perspiration too often result from their use, the doctor believed that this was of no material consequence and never resulted disastrously. For burns, the use of castor oil and lime water, in place of linseed oil and lime water, has the advantage of a perfectly bland protective application which does not dry upon the surface as the "carron oil" is known to do. In the writer's experience no cathartic effect results from such use of the castor oil.

Washington.

QUARANTINE REGULATIONS.—The Secretary of the Treasury has added the following paragraph to the United States quarantine laws and regulations: "All bedding provided for steerage passengers must be destroyed or disinfected before being landed. Bedticking or other covering of mattresses and pillows used by passengers or crew shall not be landed unless disinfected at the quarantine station in accordance with these regulations, and tagged with the labels certifying to said disinfection."

MEDICAL AND SURGICAL SOCIETY.—At the April meeting of the Society Dr. P. C. Hunt read the paper of the evening, entitled the "Therapy of Phthisis." He said the only means of eradicating the disease was prophylaxis, and emphasized the fact that it is only through an early diagnosis that we may hope to accomplish a cure. He recommended the use of tuberculin as a means of early diagnosis in suspected cases of human tuberculosis. He mentioned a case where it had been so used as early as 1892. He does not believe in seroptherapy in phthisis—though advises tuberculin in incipient cases, and creasote in small doses as a stomachic tonic. He does not believe this has any direct action on the bacilli in the body; has obtained the best results from strychnin in doses of 1-40 grain. He believes hygiene and alimentation one of more importance than drugs or climate, though each plays an important part in the treatment of the disease. The paper was discussed by Drs. Vincent, J. Eliot, Kober, Moran, Chamberlin, Mayfield and others. Dr. Chamberlin reported a case of nasal cystoma which he had successfully removed. He presented the specimen. An interesting discussion followed.

TO CHECK EXPECTORATION IN STREET CARS.—The Commissioners will shortly promulgate a police regulation prohibiting people from expectorating in or on any part of a street car. The new regulation will compel the railroad companies to keep posted notices of the regulation in each car, and will endeavor as far as possible to see to it that the regulation is faithfully observed. A fine of not less than $10, and in default imprisonment in the workhouse not exceeding fifteen days, is provided.

FINE FOR VIOLATING THE MEDICAL PRACTICE ACT.—Simon Ford, colored, a so-called voodoo doctor, was fined $50 and sentenced to ten days' imprisonment in jail in default for "practicing medicine" in the District without a license from the medical supervisors. The law will be pushed vigorously in the future, and it is hoped will soon rid the District of all "irregulars." The health officer has his eye on a number of such cases and will soon bring them into court.

STATED MEETING OF THE MEDICAL ASSOCIATION.—At a meeting of the Medical Association for the District of Columbia held on the 6th inst. the following officers for the ensuing year were elected, viz.: President, Dr. G. Wythe Cook; vice-presidents, Drs. Bowen and Ruffin; secretary, Dr. Wellington; treasurer, Dr. Deeble; councillors, Drs. McLain, Holden, Ober, Acker, Kober, Carr, T. R. Stone, H. L. E. Johnson and D. O. Leech; censors, Drs. Woodward, Frank Leech and Mayfield. Delegates to the meeting of the AMERICAN MEDICAL ASSOCIATION to be held in Philadelphia June 1 to 4 as follows: Drs. Cook, Barrie, Busey, Mayfield, L. Eliot, Deale, J. T. Johnson, H. L. E. Johnson, Ruffin, Parker, Acker, Hunt, Brown, Heiberger, Scott, S. S. Adams, Bovee, Nordhoff, Jung, Carr, I. S. Stone, McLaughlin, Glazebrook, Belt, F. Leech, Bogan, Wellington, D. O. Leech, Franzoni, Magruder, Tompkins, Sohon, Kleinschmidt, Moran, W. P. C. Hazen, Kober-Woodward, J. Eliot and Reyburn. The following new members were elected: C. Neil Barry, Edmund Barry, Frank W. Braden, Durees Desmus Carter, Marion B. Carter, Edward Francis Cummiskey, Hub'd Gillette, Franz A. R. Jung, Robert L. Lynch, Bernard Francis McGrath, Robert Daniel Mayer, Frank A. Mazzei, Homer Sanford Medford, Thomas Miller, Leonard W. Munson, James Richard Tubman and William O. Wetmore.

THE EPISCOPAL EYE, EAR AND THROAT HOSPITAL.—The new hospital known as the Episcopal Eye, Ear and Throat Hospital was formally dedicated on the 7th inst. Addresses were made by Bishop Satterlee, D.D., Drs. N. H. Nicken and W. W. Johnston. The hospital will be open every day for the treatment of dispensary cases.

THE PUBLIC SERVICES.

Army Changes. Official List of changes in the stations and duties of officers serving in the Medical Department, U. S. Army, from April 3 to 9, 1897.

Capt. Eugene L. Swift, Asst. Surgeon, is relieved from duty at Ft. Yates, N. Dak., to take effect upon the expiration of his present sick leave, and ordered to Ft. Slocum, N. Y., for duty.

Capt. Edward R. Morris, Asst. Surgeon (Ft. Spokane, Washington), is granted leave of absence for six months, to take effect on or about May 18, 1897.

Capt. Henry S. T. Harris, Asst. Surgeon (Ft. Preble, Maine), leave of absence granted for seven days is extended twenty-three days.

Navy Changes. Changes in the Medical Corps of the U. S. Navy for two weeks ending April 10, 1897.

Surgeon C. U. Gravatt, ordered to examination for promotion, Washington, D. C., April 5.

Asst. Surgeon J. C. Prior, ordered to the naval laboratory and department of instruction, New York, April 5.

Asst. Surgeon F. C. Cooke, ordered to examination for promotion, New York, April 5.

Asst. Surgeon G. D. Costigan, detached from the "Vermont" April 6 and ordered to the "Lancaster" per steamer of April 7.

Asst. Surgeon D. H. Morgan, detached from the naval laboratory, New York April 6, and ordered to the naval academy April 8.

Surgeon C. U. Gravatt, when finished with examination for promotion April 5, detached from the Museum of Hygiene, ordered home and then hold himself in readiness for sea.

P. A. Surgeon J. A. Guthrie, detached from the "Katahdin" and ordered to the "Alliance."

Asst. Surgeon J. F. Leys, detached from the "Alliance" on relief and ordered to the "Vermont."

Medical Director T. N. Penrose, detached from the New York hospital June 5 and placed on waiting orders.

Medical Director G. W. Woods, detached from the Mare Island hospital May 10 and ordered to the New York hospital June 5.

Medical Inspector G. P. Bradley, ordered to the Mare Island hospital May 10.

P. A. Surgeon E. P. Stone, detached from the "Indiana" April 12 and ordered to the "Bennington."

Change of Address.

Ayres, S., from 247 Shady Av. to 326 Moorewood Av., Pittsburg, Pa.
Cresswell, G. H., from Chicago, Ill. to Awada, Wyo.; Clark, J. F., from 161 to 788 Jackson Boul., Chicago, Ill.
Deutsch, J., from 215 Main St. to 30 Monroe St., Memphis, Tenn.
Eckman, P. N., from 2229 Fairmount St. to 624 N. 22d St., Philadelphia.
Gamble, W. E., from 264 S. Halsted St. to Blue Island Av. and Harrison St., "New Era Building," Chicago, Ill.
Harlan, Herbert, new address, 516 Cathedral St., Baltimore, Md.;
Henkle, C. K., from Independence, Ore., to Juliaetta, Idaho.
Kent, J. L., from New York, N. Y., to Pulaski, Va.
Moody, H. C., from Mobile to Bailey Springs, Ala.
Norton, J. J., from Biloxi, Miss., to Monroe City, Mo.
Renn, T. H., from 227 Townsend St. to 1240 Milwaukee Av., Chicago, Ill.
Still, H. M., from Evanston, Ill. to Kirksville, Mo.; Silverberg, Geo. M., from 330 Blue Island Av. to 465 Marshfield Av., Chicago, Ill.
Thornbury, F. J., from 610 Main St. 401 Delaware Av., Buffalo, N. Y.
Withous, R. A., from 303 W. 77th St. to 410 E. 26th St., New York, N. Y.;
Wilson, F. P., 922 A Sutler Av. to 1101 Van Ness Av., San Francisco, Cal.

LETTERS RECEIVED.

Adams, M. M., Greenfield, Ind.; Alma Sanitarium Co., Alma, Mich.
Bogie, M. A., Kansas City, Mo.; Bausch & Lomb Optical Co., Rochester, N. Y.
Caldwell, John, Los Angeles, Cal.
Dibrell, J. A., Little Rock, Ark.; Duryee, Chas. C., Schenectady, N. Y.
Eugene Field Monument Fund, Chicago, Ill.; Edwards, T. L., Cuba City, Wis.
Fairchild Bros. & Foster, New York, N. Y.; Finlayson, D. W., Des Moines, Iowa; Fuller, Chas. H., Advertising Agency, Chicago, Ill.
Graham, J. T., Booneville, Tenn.
Hughes, C. H., St. Louis, Mo.; Harvey, G. F., Co., The, (2) Saratoga Springs, N. Y.; Hummel, A. L., Advertising Agency, New York, N. Y.
John, J. W., Princeton, Ark.
Kentucky School of Medicine, Louisville, Ky.
Lempke, A. F., Hospital, Ill.
Mayo, W. J., Rochester, Minn.; McGuire, C. A., Topeka, Kan.; Mitchell, Jno. T., Kansas City, Mo.; Montgomery, E. E., Philadelphia, Pa.
Pepper Laboratory of Clinical Medicine, University of Pa., Philadelphia, Pa.; Phenique Chemical Co., St. Louis, Mo.; Platt, H. B., New York, N. Y.
Richey, S. O., Washington, D. C.; Reed & Carnrick, (2) New York, N. Y.
Shippey, F. M., Waterloo, Iowa; Smart, Chas., Washington, D. C.; Stephens, R. S., Dover, Del.; Sampson, E. S., North Syracuse, N. Y.; Sternberg, Geo. M., Washington, D. C.
Tobey, H. A., Toledo, Ohio; Talbot, Eugene S., Chicago, Ill.; Tyson, James, Philadelphia, Pa.; Tyree, J. S., Washington, D. C.
Watkins, T. J., Chicago, Ill.; Ward, Milo B., Topeka, Kan.